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AMERICAN VETERINARY MEDICAL ASSOCIATION

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AVMA ☆ Report

Veterinary Medical Activities

✦ Dr. W. M. Coffee's presidential address which appears in this issue makes a strong plea for more active participation by all AVMA members. He also urges nonmember veterinarians to join and support their professional associations.

★ ★ ★

✦ Dr. E. E. Wegner, Executive Board member from District VII, will represent the AVMA at the annual meeting of the Canadian Veterinary Medical Association in Banff, Alta., Sept. 8-11, 1951.

★ ★ ★

✦ Formation of state and local association "grievance committees"—to receive and act on owners' valid complaints about veterinary services—is the next logical step for the profession, public relations workers and delegates to the House of Representatives were told at the AVMA Milwaukee meeting.

★ ★ ★

✦ More than 1,000 new members were added to the Association's rolls in the year ended June 30, 1951. Total membership is now 11,000.

★ ★ ★

✦ Veterinarians honored with awards at the Milwaukee meeting were: Dr. R. S. Sugg, Auburn, Ala., Twelfth International Veterinary Congress Prize; Dr. A. H. Quin, Kansas City, Mo., AVMA Award; and Dr. Louis A. Klein, Moylan, Pa., Borden Award. See the October JOURNAL for a full report on these awards.

★ ★ ★

✦ Dr. P. G. MacKintosh, Yakima, Wash., was elected chairman of the first Executive Committee of the House of Representatives and attended the annual meeting of the Executive Board in Chicago, prior to the Eighty-Eighth Annual Meeting in Milwaukee.

★ ★ ★

✦ President J. R. Wells has completed his appointments to the Association's 33 special and standing committees. Several committees were able to meet during the recent convention in Milwaukee and make plans for their activities for the year. The roster of the new officers and committees will be published in the October JOURNAL.

★ ★ ★

✦ "Stumbling Blocks or Stepping Stones" is the title of a talk to be given by Dr. C. D. Van Houweling, assistant executive secretary, at the Iowa Nutrition Conference for Veterinarians at Iowa State College, Ames, on Sept. 13, 1951. This is the second of these annual conferences which have been sponsored by the veterinary profession, the feed industry, and the College.

★ ★ ★

✦ President J. R. Wells and Drs. W. R. Krill and M. R. Clarkson discussed the Milwaukee AVMA convention and civil defense planning and organization on the National Farm and Home Hour (N.B.C.) Aug. 25, 1951.

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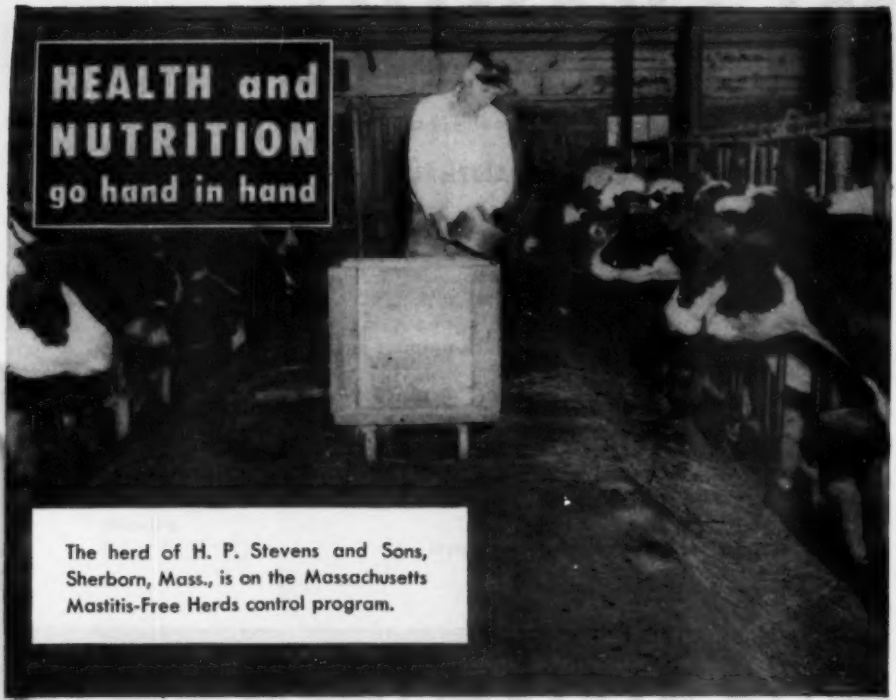

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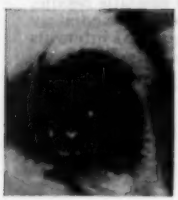

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1. Jensen, H. E.: Vet. Med., (In Press.)

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VOL. CXIX SEPTEMBER, 1951 NO. 894

The President's Address

W. M. Coffee

La Center, Kentucky

I want to again express my appreciation for the honor of being elected president of the American Veterinary Medical Association, the world's largest veterinary medical organization, and for the confidence placed in me as your leader for 1950-1951. During this period, my activities have been somewhat disrupted and curtailed. It has, however, been a source of real pleasure to meet and to fulfill, to the best of my ability, each task presented during the year. I would also like to acknowledge and thank the other officers, committeemen, and staff members for their splendid coöperation during my administration.

During my term of office, I have had the pleasure of attending numerous veterinary meetings and visiting most of the colleges in North America. I have had the opportunity to speak to approximately 3,000 veterinary students, a gratifying experience which has given me a bright view of the future for veterinary medicine. I have also had the opportunity to visit with many veterinarians in all branches of the profession and discuss their problems with them. Through these discussions, I have become more convinced than ever of the need for careful planning for the future. This planning should be materially aided by the newly inaugurated Executive Committee of the House of Representatives which is, as you know, composed of members from each major branch of the profession.

Our Responsibilities

As a profession, we have the primary responsibility of safeguarding the health of the animals supplying so much of the nation's food and, also, of coöperating with the producers and processors of these foods. We can also assist in instigating better production and food-processing methods which will help meet the increasing civilian and military demands.

It has often been said that a good reserve of food is the best defense a nation can

President W. M. Coffee

have. Fortunately, our federal government realizes the importance of maintaining an adequate supply of "health-protective" foods of animal origin for the people. Our rapidly increasing population requires more of these foods and, therefore, the veterinarian's responsibility increases. The production of foods of animal origin must be made more efficient by improved disease control if the needs of our increased population are to be met. We must never forget the important contribution of livestock in maintaining the fertility of the soil, while transforming grain and grass into meat and dairy products.

It is the responsibility of the American Veterinary Medical Association, as the national organization of our profession, to inform governmental agencies how we can render the best veterinary medical services and, particularly, those which will help to maintain and conserve the livestock industry for the benefit of humanity. If necessary, we must endeavor to influence governmental agencies to accept our views along these lines. The directing of veterinary medicine so that it can render the most efficient service is the responsibility of the state and national veterinary medical organizations. They are expected to have the "know how" and are the official spokesmen for the profession. Society looks to our associations to guide the profession and, at the same time, holds us responsible for the present and future success or failure of veterinary medicine. So far, as demonstrated by the quality and health of our livestock, our profession in North America has met the challenge quite well. This achievement is the result of an efficient and practical application of veterinary science, and can only be accomplished with the proper correlation between research workers, practitioners, and regulatory personnel.

Need for Specialization

Today, veterinary medicine covers such a broad field that a number of specialized branches are needed. No one veterinarian can possibly be highly qualified in all of them. As the demand for specialized veterinary service increases, our profession must be prepared to meet it. When I review the new fields of opportunity in veterinary medicine that have developed since World War I, I feel sure that the surface only has been scratched.

Necessary Adjustments

An analysis of the adjustments which our profession will have to make in the future if it is to maintain its prominent position among the other professions, a position founded upon the rendering of highly skilled services, leads me to the conclusion that several principal veterinary activities will have to be kept active and correlated at all times. They are: (1) high standards of veterinary medical education and personnel; (2) adequate and competent veterinary medical service in the field at a reasonable cost; (3) more veterinary research supported by ample research funds; (4) good public relations for individual veterinarians in the field and for the profession as a whole; (5) effective federal and state livestock disease control measures; and (6) discharge of our professional responsibilities in times of emergency or actual conflict.

Trends in Veterinary Medicine

Prior to World War II, there were only 12 veterinary colleges in the United States and Canada. During the war, the work which veterinarians performed in the Armed Forces proved that they were an important part of our military organization. They were found to be expert advisers and invaluable consultants in all matters pertaining to food-borne diseases, diseases of animals communicable to man, and many other problems pertaining to public health and preventive medicine.

Demand for Veterinary Education

The conception of applying the broad education gained in the training for a degree in veterinary medicine and how it fitted one to render a more comprehensive service was firmly implanted in the minds of many young men returning to civilian life. This led to a greatly increased interest in veterinary medicine as a career. Seven new schools were establised to meet the demands for education and for service from the livestock industry. The enrollment in all of the old established schools of veterinary medicine expanded rapidly to the maximum.

In the fall of 1950, 998 applicants were

admitted as first year students. They were selected from the 3,607 applications received by the schools, which is a ratio of one admission for each four applicants. This demand for veterinary education provides an extra impulse to veterinary medicine. What are some of the trends which result?

First, a better trained and prepared graduate. Today, a student wishing to enter a veterinary school must have a minimum of two years of preveterinary college training instead of the one year previously required. Thus, six years of college work, after high school graduation, are required for a degree in veterinary medicine from the approved schools in the United States. In 1949 and 1950, more than half of the applicants admitted to the schools had three or four years of preveterinary college training. This additional college training before entering a veterinary medical school equips members of the profession for those callings which require advanced training and specialization. This additional educational background also makes it possible for graduates to take courses leading to advanced degrees.

A second trend is the recognized importance of the Air Force base veterinarian's position on the base surgeon's staff. This no doubt was facilitated by the development of the Air Force's own Veterinary Corps.

A third trend is to utilize the services of a veterinarian in attempts to raise standards of living of tropical countries under the "point-four" program. This will require the services of additional well-trained veterinarians. These veterinarians will have and should have a broad training in the basic sciences. The various tropical maladies offer so many baffling problems, even to the veterinarian who is well trained, that they will provide a challenge. He will also have an opportunity to coöperate with other public health workers in an effort to stamp out infections in these countries which affect men and animals alike.

NEED FOR NUTRITION KNOWLEDGE

Veterinarians need now, more than ever before, better training and instruction in animal nutrition. Veterinarians must be well trained in this field so that they can better assist and advise livestock owners how to produce and market animals with minimum amounts of feed and in the shortest possible time. We must know more about the "APF" factor, including vitamin B_{12} which, because of its effect on animal growth, has been described by some as the greatest nutritional discovery of our time.

It is my opinion that, in the selection of young men for veterinary medical training, much consideration should be given to their backgrounds and to their future plans and prospects for filling some of the needs for personnel in branches of veterinary medicine where shortages now exist. I have the highest regard and respect for our veterinary educators and research workers, but we dare not allow too much emphasis to be placed on research with the result that we overlook the fact that, in the final analysis, veterinary medicine is the application of the research by practitioners.

THE VALUE OF VETERINARY ORGANIZATIONS

The stated objective of the American Veterinary Medical Association is "to advance the science and art of veterinary medicine, including their relationship to the public health." Just how well the Association does these things determines its value to society, to our members, and to veterinary medicine in general. To be effective, our organization must have in its councils equitable representation from all branches of the profession. As stated earlier, I believe that the newly inaugurated Executive Committee of the AVMA House of Representatives can perform a very real service to the Association and the profession if the committee will undertake its assignment with due thought and vision. Their deliberations and recommendations can be most helpful in preventing some of the "drifting" of different groups within our profession and the Association.

Our profession numbers some 16,000 in the United States, a relatively small group, only about 0.01 of 1 per cent of our total population, but potentially powerful if it is *united*. Hence, the Association needs 100 per cent membership, support, and active participation in its affairs by these 16,000 veterinarians. This is, perhaps, especially important in the case of practitioners who render the bulk of veterinary services and so meet the public more than other members of the profession. These public contacts are a means of generating great good will and influence when properly utilized.

NEED FOR A STRONG NATIONAL ORGANIZATION

I believe you would all agree that the veterinary profession would soon "lose out" in our rapidly changing, modern society if we did not have an organization to look after our interests and plan our progress. We need not look far to see the value of organized groups in our national life today. The old saying, "In union there is strength," is demonstrating its truth and force more today than at any time in our history.

I can not stress enough the need for a strong veterinary organization: (1) By having a strong organization, we establish an official spokesman and an official channel through which our opinions can be effectively voiced; (2) we need a strong organization because our number is small, especially when compared with the large amount of diversified services we are called upon to perform, and compared with the size of the groups we sometimes oppose; (3) we need a strong organization to protect our profession against encroachment by unqualified competitive services; (4) we need a strong organization in which all branches of our profession are represented so that we can chart our future course as intelligently as possible.

ALL VETERINARIANS URGED TO JOIN THE AVMA

Because a strong national association is essential to our professional progress, I urge every eligible veterinarian, who is not a member, to join the AVMA. Then take an active part in the Association's work according to your particular phase of professional activity. We need every veterinarian as a member to enable us to carry more "weight" in the national picture. We also need the active interest and financial support of every eligible veterinarian in order to have the "ways and means" of doing the things expected of our organization.

Not only does our Association need all eligible veterinarians as members to support and help carry on its functions; individual veterinarians need the facilities that are available only from an organization such as ours. A veterinarian's prestige is elevated by membership in his state and national associations. Membership in the AVMA and state associations creates a medium for the exchange of knowledge and ideas with colleagues which makes for greater individual efficiency as well as group progress.

AVMA COMMITTEE ACTIVITIES

Much of the work of any association has to be done by others than the officers and staff. The committees of the AVMA are fine examples of what can be done. The 33 committees and 12 representatives of the AVMA to other organizations carry on many of the Association's important activities which the average member knows little or nothing about. The work the Council on Education has done during recent years has been vital to veterinary medical education. Members of the Council and particularly the "inspecting team" have devoted many days to its work. But, outside of college faculties, little is known about their fine work.

I could cite several other examples but time doesn't permit me to mention all of them. The work of the Emergency Advisory Committee, which I appointed last September, has been outstanding. After attending a meeting of the American Medical Association's Council on National Emergency Medical Service last September, I realized more than ever that we had a job to do. The Emergency Advisory Committee was appointed with an Executive Committee of six members and they have performed nobly the duties given them. This committee has, with W. R. Krill as chairman, C. D. Van Houweling as secretary, and Asa Winter as the Washington representative, kept the profession abreast of developments in the military and civil defense fields. Through letters to the parallel state committees, JOURNAL articles, and their committee meeting reports, they have supplied a continuous flow of information to all veterinarians. They have represented the profession in dealings with the government agencies and military departments. They have supplied reams of information and data to these agencies whose demands are not easily met. This committee can rightfully take credit for having veterinary medicine represented on the National Advisory Committee, known as the Rusk Committee, which has recently become a part of the office of Defense Mobilization, and is the chief national advisory committee on medical manpower.

As the result of their work, the civil defense planning of our professional associations has been correlated with that of our federal and state governments. This would not have been the case were it not for the AVMA committee.

The economic survey being conducted by the Veterinary Service Committee is another commendable activity which will produce a wealth of valuable data never before available. Similarly, several other committees are working on and completing important projects.

PUBLIC AND PROFESSIONAL RELATIONS DEPARTMENTS

These two departments of the AVMA are concrete evidence of the recent growth and expansion of the Association since both have been established since World War II. Since the work of these departments is closely correlated and overlaps, I will discuss them together.

In addition to the organized newspaper and radio campaign which the AVMA carries on with annual expenditure, and which has been fairly constant for about five years, of about $20,000 a year, these departments do much other "public relations" work. Work carried on with authors, editors, and radio men is seldom evident in the published articles or broadcasts. Of the recent rash of articles about veterinarians which have appeared in women's and other popular magazines, it is significant to note that the author of the article universally recognized as the best received much of his material from the central office. These contacts and relationships with authors and editors are continually increasing and are tremendously important to our profession.

All state associations should have active public relations programs. This does not require a large expenditure for "outside" talent such as publicity and public relations men. If state associations will take advantage of the services and help available to them from the AVMA office they can have an active, effective newspaper and radio program with little or no expense. All that is needed is a good active public relations committee utilizing the material and assistance available.

The development of active, coöperative relations with the student chapters is one noteworthy activity of these departments. At the present time, 16 of the 17 schools of veterinary medicine in North America have active student chapters. The value of this active affiliation of the students with the parent organization while still in school is evidenced by their interest in AVMA membership when they graduate. Of the 864 graduates from schools in Canada and the United States this year, 801 or almost 93 per cent have already joined the AVMA. The wonderful coöperation of the deans and other faculty members who assisted in this enrollment is certainly appreciated. Incidentally, all of the 1951 graduates from nine of the schools became members. The membership growth from student chapters and from the other membership expansion campaigns which these departments continually carry on is resulting in the most rapid and sustained growth the Association has ever experienced.

CONCRETE BENEFITS OF MEMBERSHIP

Many values of membership are perhaps of the abstract type, but there are also many concrete advantages. For example, some of these concrete benefits of membership are: (1) All members receive, without cost, the monthly JOURNAL of the AVMA; and (2) the "Proceedings Book," a complete report of the papers, reports, and business meetings of the annual convention. (These two publications alone cost the nonmember $11.50 a year.) (3) Also available to members are the *American Journal of Veterinary Research* for only $2.50 a year in addition to the regular dues; (4) the *AVMA Directory* for $2.00, or one-fifth of the nonmember price; (5) the opportunity to attend all sessions of the annual convention, a virtual postgraduate course and vacation rolled into one, for a $5.00 bill, one-half the nonmember registration fee; and (6) use of the Association's film and slide library. (7) Professional liability insurance is available only to members at a special group premium. The value of this professional liability insurance to practitioners is becoming more important each day. The public not only expects professional men to be responsible for their acts, but also expects them to implement that responsibility, when necessary, by suitable means such as insurance. (8) The somewhat more abstract, but ac-

tually concrete, benefit of day-in and day-out representation in all dealings with other national organizations and the federal government.

I have touched only briefly on some of the AVMA's activities. Nothing was more surprising to me during my two years in office than to see the extent of the Association's day-to-day activities. Yet, I am sure that I do not fully realize the extent of what the AVMA is doing. It would require spending days and days in the central office to grasp the whole picture of what the AVMA does for its members.

In my travels, I talked with veterinarians, members and nonmembers, who were critical of what the AVMA was *not* doing. In other words, they thought the Association should be doing more in a variety of fields. The officers and staff are aware of projects and activities that the Association *should do* and *would do* if funds and personnel were available. After being closely associated with the innermost working of your national association for two years, I am thoroughly convinced that the best service possible with the limited funds and personnel available is being performed for the members. Incidentally, I have not observed any association where members receive as much for the dues they pay. The earnest interest and active participation of all veterinarians as members will enable the Association to do even more and reach new heights of service.

In summary, I want to say that, as a group, we can not afford to be without the benefits of proper organization and a well directed organization program. We owe it to ourselves and to society to be always ready to serve capably and act promptly on matters affecting the veterinary profession. That is our inherent duty as a "public administrative" agency, private in nature but with recognized responsibilities to the public.

Conditions Have Changed—A.M.A. Journal

Excerpts from an address by Dr. Louis H. Bauer, president-elect of the American Medical Association, to the A.M.A. House of Delegates, published in that Association's *Journal* (July 7, 1951: 944).

Conditions have changed in the past quarter of a century. Doctors and medical societies can no longer be purely scientific in their viewpoints. They must have an interest in the economics of medicine and in the methods of distribution of medical care. . . .

We must be leaders in the development of community health councils. We must further expand our grievance committees which have been growing rapidly. Panels of physicians must be available everywhere to cover night, holiday, and emergency calls. Nothing irritates a citizen more than being unable to obtain a doctor when he needs one. We must assist in the training of auxiliary and technical personnel of which there is a great shortage.

More About Brucellosis in Farm Journals

The editorial, "Brucellosis Eradication—A Challenge To Be Met" (June, 1951, JOURNAL: 404-405), called attention to certain articles in farm publications about brucellosis, which were the first of a series to appear in these magazines. *Prairie Farmer* (July 7, 1951) contains the sixth of its series, "Area Testing," on brucellosis as well as an editorial on the subject. In addition, letters discussing brucellosis are being published frequently in the "Our Readers Say" column of this magazine. The June and July issues of *Farm Journal* also contain articles entitled "Here Are the Facts About Brucellosis" and "How To Keep Your Herd Clean," respectively. It is safe to predict that there will be other articles on brucellosis published in subsequent issues of these magazines, as well as other farm publications.

If this discussion of brucellosis is an indication of the "frame of mind" of the agricultural press and the influence such writing has on farm readers, it seems obvious that our profession has to take cognizance of this trend of thinking. Brucellosis eradication is a tremendous challenge to veterinary medicine and the livestock industry. A firm, competent hand at the "controls" is necessary. Where, but from veterinarians can this leadership come? Brucellosis eradication is *still* a challenge to be met.

• • •

A copy of the following letter to *Farm Journal* (July, 1951), sent to the JOURNAL by Dr. R. A. Hendershott of New Jersey, is in response to an article in that magazine by Claude W. Gifford entitled "How to Keep Your Herd Clean" in which Dr. Hendershott is quoted as follows: "No veteri-

narian should get too busy to scrub his shoes and wear clean clothes; if so, he should get out of the profession. Any farmer who doesn't come right out and tell a careless veterinarian that he's endangering the health of his herd, should have his head examined."

JUNE 15, 1951

FARM JOURNAL,
WASHINGTON SQUARE,
PHILADELPHIA 5, PA.

Attention Claude W. Gifford.

Dear Sir:

Your articles on brucellosis are very interesting and enlightening, so I would like to tell your Dr. Hendershott about the Veterinarian we have. He is Dr. B. F. Ward, [ISC '38] of Alton, and he comes to your farm in a clean shirt and trousers, then dons a clean pair of coveralls, and rubber overshoes, asks for plenty of boiling water, scrubs hands and when finished he drops all instruments into boiling water and disinfectant and pours some disinfectant over the boots, then scrubs them thoroughly, scrubs hands thoroughly, then warns us not to wear the same shoes at the barns that have been worn at any other farm or sale barn, so as not to spread diseases. Now I think if this could be impressed upon farmers and other Vets, a lot could be done about the spreading of all disease. This Vet is also very helpful about giving one information about your animals, to avoid trouble.

Yours very truly,
s/JANE L. SCHELLENBERG,
Oak Brook Farm,
Rt. 2, Alton, Ill.

Air Sterilization

Ultraviolet radiation and the volatilization of germicidal agents into the air are the two most common methods followed in trying to sterilize air. The irritant effects, the limited range, and the expense of ultraviolet light have almost eliminated its use on a large scale. Triethylene glycol is a nontoxic substance, under practical conditions. It has a relatively low-grade germicidal quality and depends for its effect on its highly hygroscopic nature and the ease with which it is volatilized.

It is difficult to obtain the necessary concentration, or humidity, or even distribution in an open system of ventilation. Since the effective range of most aërosols is so limited, it is doubtful that they are of much value.

Early observations have shown little difference in general incidence of disease or growth rate which can be attributed to triethylene glycol, and which would repay the considerable expense of its application. —*Peter Alice, D.V.M., Wisconsin.*

Correction of Report on "Brucella M Vaccine for Wisconsin"

Dr. B. T. Simms was incorrectly quoted in the item, "Brucella M Vaccine for Wisconsin" (July, 1951, JOURNAL, p. 68). The misquotation appears in the third paragraph, where it is stated: "He cited three shortcomings of the vaccine: It does not produce strong resistance, vaccinated animals react to the blood test, and the vaccine is slightly pathogenic." Dr. Simms was referring to shortcomings of strain 19 vaccine, but through an error that arose in abstracting, the JOURNAL item incorrectly attributed these shortcomings to Brucella M vaccine. This error is greatly regretted.

Gleanings from Reports of AVMA Committees

Council on Education.—The Council reports that, almost without exception, the veterinary schools of the United States and Canada have shown steady improvement during the last five years. The Council does not presume to claim full credit for these changes, but it has played a significant part in bringing them about.

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Representative to the National Livestock Loss Prevention Board.—Private practitioners were urged to refrain from using biological products immediately before shipping because of the reactions which sometimes accompany their use and which add to the trouble already caused by a change of feed, weariness due to handling, and shipping.

• • •

Practitioner Participation in Brucellosis Control.—It is up to the veterinarians in the United States to lead the way in brucellosis eradication. The practitioner is the key man in any disease eradication program. He is the logical man to eradicate brucellosis in the herds of his clients. However, if practitioners can not do this field work, if state and/or federal veterinarians are not in sufficient numbers to carry on this work, then laymen will be called on to do it. In fact, they are doing it in some states.

• • •

Nomenclature of Diseases.—Work on the topographic classification is now under way. Numerous problems arise which require solution before progress can be made. When the etiological and topographic classifications are complete, your

committee proposes to develop an abridged tentative list of diseases.

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Registry of Veterinary Pathology.—The primary function of the Registry of Veterinary Pathology is to provide a source of material for the study of veterinary and comparative pathology rather than a free diagnostic service in veterinary pathology.

• • •

National Formulary Committee.—The Subcommittee on Veterinary Items, National Formulary Committee, solicits suggestions from all interested sources concerning drug items for which standards might be desirable.

• • •

Emergency Advisory Committee.—A close coordination of civil defense planning between the professional associations and the federal government has been achieved by the efforts of this committee.

• • •

Therapeutic Agents.—The weakest link in the chain of events between the manufacture of a new product and the practicing veterinarian is the clinical investigation of the drug. It is extremely difficult to obtain adequate clinical appraisal for new preparations. The problems involved are not insurmountable. One objective is to help provide the means for adequate testing and then to demand such testing of all products we accept.

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Scientific Exhibit Committee.—State and regional veterinary medical associations and student chapters are urged to take advantage of the opportunity to borrow exhibits for meetings where they can present exhibits. Requests for the use of exhibits should be sent to the AVMA office.

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Humane Act Award.—This year, for the first time, subsidiary awards will be made as a means of giving recognition to entries which, though not qualifying for the top award, are of sufficient worth to deserve special mention. This means that runner-up mention can now be given to as many as 12 youngsters a year.

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Poultry.—Serological tests, vaccines, the sulfonamides, antibiotics, and other drugs have a distinct place in poultry production. Practicing veterinarians can be of material aid in the intelligent use of these products.

• • •

Representative to the Ralston Purina Research Fellowship Committee.—In the three years this fellowship has been available, it has been used only once by a veterinarian (1950-51). It will be difficult to maintain this fellowship if veterinarians continue to show no interest in it.

• • •

Legislation.—The experience of the past year, especially, as well as the experiences of the "preparedness" and actual conflict stages of World War II, have shown the need for some sort of Association representation in Washington to keep in touch with the many legislative developments affecting veterinary medicine and the many agencies concerned with professional problems. It has been suggested that study be made of some arrangement whereby the AVMA would have at least a part-time representative at the national capital.

• • •

Veterinary Service.—The committee considered the long-range effect of providing veterinary service to livestock owners by government agencies. The committee tried to evaluate the over-all, long-range effect of these programs on: (1) the settlement of veterinarians in the so-called marginal areas; (2) participation and interest of livestock owners and veterinarians in the programs; and (3) the eventual eradication of disease.

• • •

Ethics.—A review of the telephone directories in the large cities shows a great improvement in the listings of veterinarians. This has been accomplished largely through the efforts of the local committees on ethics.

• • •

Research Fund-Raising Committee.—By providing a steady flow of young men trained in fundamental research, the AVMA fellowship project is filling a need that has long existed in the animal disease field. An undertaking such as this is one of the principal hopes for finding answers to many baffling disease problems.

• • •

Public Relations.—We know of no other national association that is attempting to conduct its public relations on such a nominal budget or is accomplishing so much good work for such an extremely small expenditure.

• • •

Representative to the United States Pharmacopoeial Convention.—It is recommended that a committee of three be appointed to study the question of veterinary needs and the official standards of the U. S. Pharmacopeia. It is further recommended that the committee, in coöperation with the Subcommittee on Veterinary Items, National Formulary Committee, aid in the establishment of offical standards for those items of veterinary importance included in the "National Formulary".

• • •

Diseases of Small Animals.—The committee recommends that they be empowered by the Executive Board to prepare a suitable information pamphlet for distribution by veterinarians to their clients. The pamphlet would contain information on the following subjects: selection of a pet; information on feeding the dog and cat; first aid suggestions; health rules with emphasis on hygiene and sanitation.

• • •

Animal Reproduction and Artificial Insemination.—The total loss from cattle reproductive failures in the United States is more than $500

million annually. Artificial insemination in cattle is now a multimillion dollar business.

• • •

Diseases of Wild and Furbearing Animals.—Extended knowledge of diseases of wildlife is important from three points of view: (1) the decimating effect such diseases have on wildlife itself; (2) the influence such diseases may have on public health; (3) the transmissibility of wildlife diseases to domestic animals, and *vice versa*. Botulism kills at least 100,000 ducks a year and some years considerably more.

• • •

Diseases of Food-Producing Animals.—Livestock sanitary officials, asked to report any diseases that appeared to be on the increase in their state, listed anaplasmosis more frequently than any other disease.

• • •

Hospitals for Large and Small Animals.—Many of us are satisfied to carry on from the trunk of our cars, and do not care to take on the added effort that is necessary to conduct a hospital. In some locations, a hospital would be an unnecessary expense; but in many places, where both large and small animals are cared for, a well-planned and conducted hospital could be profitable as well as a great source of satisfaction.

Status of Foot-and-Mouth Disease in Mexico, July, 1951

Patience and sincerity of purpose seem to be paying dividends in Mexico's long and obstacle-ridden campaign to drive out foot-and-mouth disease.

In a release dated July 9, 1951, the Mexico-United States Commission for the Eradication of Foot-and-Mouth Disease said that psychological factors surrounding the campaign have changed for the better in many areas, with farmers becoming more cognizant of the importance of coöperating with livestock inspectors and veterinarians. In fact, of the seven outbreaks seen in Mexico in the past two years, five have been reported by owners themselves, according to the Commission. This is in sharp contrast to the antagonistic and sometimes openly belligerent attitude that dominated earlier stages of the campaign.

The educational phase of the program will continue to stress the importance of immediate reporting of suspicious cases, because, as Co-Director L. R. Noyes pointed out, "no matter how many inspectors we have, the 220,000 square miles and more than 17,000,000 animals in the quarantine zone could not be adequately covered by inspectors without the coöperation of local officials and livestock owners."

The "report immediately" appeal continues to bring in a large number of false (but nevertheless welcome) alarms. Vesicular stomatitis, hard-palate scratches due to rough feed, contagious ecthyma, pododermatitis, oral papillomas, and sores on teats are the major causes of confusion among farmers.

While calling the status of the campaign "favorable," officials are refraining from predictions. "No one now directly connected with the program would agree that all danger of infection is past," Dr. Noyes commented.

License Status of Hog Cholera Vaccines, Modified Live Virus Type

In view of the interest in lapinized hog cholera vaccines, inquiry was recently made from Chief B. T. Simms of the Bureau of Animal Industry as to the license status of the new vaccines which, reportedly, were soon to be available. Under date of July 25, Dr. Simms wrote as follows:

> "I hesitate to offer a statement for quotation for the September JOURNAL since what I may say could be far outdated before the September issue is published. However, it may be said:
>
> Licensing is being delayed only because we do not have the information and data requested and required for the issuance of such license, but it is being progressively supplied."

Adsorbed "Hog Cholera Vaccine"

Attention has been called to an error in translation in the clinical data item, "Adsorbed Hog Cholera Vaccine" on page 299 of the May, 1951, issue. This should have read "Adsorbed Swine Erysipelas Vaccine," as pointed out by Dr. Marko Zeljko of the Medical Research Institute, Zagreb, in a recent letter. He further states that the vaccine described by the late Professor Hupbauer has been used successfully in Yugoslavia for the past two years.

Observations Concerning Conception in the Mare

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DURING THE COURSE of horse-breeding operations at the Upjohn Richland Farms, Richland, Mich., many records have been kept which, when condensed and analyzed, may be of considerable interest to veterinarians, especially those in equine practice.

It is not proposed to analyze the equine estrous cycle as this has been very well done by Andrews,[1] Caslick,[3] and Trum.[4] However, an inspection of the breeding records for the six years, 1944 through 1949, reveals, among other things, (1) the average number of matings or services required for conception in the mare, and (2) the season of the year during which conception most readily occurs in the Middlewest.

The strength of the brood mare band at the Upjohn Richland Farms ranged from 118 in 1944 to its greatest number, 236, in 1948. With the exception of a few purebred Belgians, the mares were for the most part grade Thoroughbreds and grade draft mares of various breeds. A variety of purebred stallions were used over the six years; 4 Arabians, 3 Thoroughbreds, 2 Belgians, 1 Quarterbred, 1 American Saddlebred, and 1 Palomino figured in the breeding program during this period. In addition to these, 4 jacks were used on some of the draft mares (1946-1949).

In contrast to the three- to four-month breeding season of the modern Thoroughbred or Standardbred nursery, the breeding season at the Upjohn Richland Farms extended from the latter part of March until the end of September — a full six months. This, naturally, gave greater opportunity to re-breed mares that did not settle to the first or second matings, some being bred as many as seven times.

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The mares were in feedlots or on pasture during the major portion of the breeding season except for foaling mares which were stabled in box stalls for three to four weeks at foaling time. The mares were divided into foaling and barren mares and were usually banded in numbers of 20 to 25. Nursing mares were grouped according to the age of their foals.

In many instances, it was impossible to tease all of the mares every day, especially during the height of the breeding season, but they were "tried" at least on alternate days by one of the sires used for breeding. Foaling mares that were determined to be in breeding condition (about 90%) were teased from the sixth or seventh day after parturition and were bred at the foaling heat (7 to 14 days), or the first estrus after foaling. The mares were bred on the first or third day of estrus, depending upon their reaction to the stallion. With rare exception, they were bred only once during estrus although on several occasions "heat periods" of twelve to fourteen days' duration were observed.

Teasing of the mares was reinstituted fourteen to sixteen days following breeding and continued until forty-five or fifty days after service. If the mares had not shown estrus during this time, they were subjected to a pregnancy test. The procedure used is a modification of the Aschheim-Zondek test as described by Cartland and Nelson.[2] A citrated blood sample is taken and the mare's plasma, which contains the gonadotropic hormones when she is pregnant, is injected subcutaneously into 2 or 3 immature female rats for three days. The rats are autopsied ninety-six hours after the first injection and the pregnancy diagnosis is based upon the weight of the enlarged, hemorrhagic ovaries. The rat's distended uterus and swollen vagina and vulva

are other indications of pregancy in the mare being tested. This test proved to be nearly 100 per cent correct as the pregnant mares were used immediately thereafter to produce pregnant mares' plasma. This plasma is used for the production of gonaogen® (Upjohn)* and it is assayed for hormone content by the procedure outlined above. The pregnancy diagnosis was later confirmed by rectal examination of the mare.

TABLE 1—Number of Services Required for Conception in the Mare

Year	Mares bred (No.)	Mares conceived (No.)	Breeding percentage	Number of services per conception						
				1	2	3	4	5	6	7
1944	118	98	83.0%	54 (55.1%)	22 (22.5%)	15 (15.3%)	6 (16.1%)	0 (0.0%)	1 (1.0%)	0 (0.0%)
1945	119	96	80.7%	53 (55.2%)	26 (27.1%)	12 (12.5%)	2 (2.1%)	0 (0.0%)	2 (2.1%)	1 (1.0%)
1946	194	157	80.9%	85 (54.1%)	45 (28.6%)	16 (10.2%)	7 (4.5%)	2 (1.3%)	2 (1.3%)	0 (0.0%)
1947	230	190	82.6%	110 (57.9%)	51 (26.8%)	18 (9.5%)	7 (3.7%)	3 (1.6%)	0 (0.0%)	1 (0.5%)
1948	236	198	83.9%	123 (62.1%)	47 (23.8%)	21 (10.6%)	6 (3.0%)	1 (0.5%)	0 (0.0%)	0 (0.0%)
1949	166	139	83.7%	84 (60.4%)	40 (28.8%)	11 (7.9%)	4 (2.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	1063	878	82.6%	509 (58.0%)	231 (26.3%)	93 (10.6%)	32 (3.6%)	6 (0.7%)	5 (0.6%)	2 (0.2%)

In regard to the number of services per conception, 509 (58%) settled with one service; 231 (26.3%) with two services; and 93 (10.6%) with three services. From verbal reports concerning brood mare bands of this size which have come to the attention of the author.

TABLE 2—Mares' Conception Rate per Month

Year	Mares conceived (No.)	April	May	June	July	Aug.	Sept.
1944	98	10 (10.2%)	31 (31.6%)	33 (33.7%)	5 (5.1%)	8 (8.2%)	11 (11.2%)
1945	96	19 (19.8%)	29 (30.2%)	24 (25.0%)	7 (7.3%)	4 (4.2%)	13 (13.5%)
1946	157	15 (9.5%)	37 (23.6%)	30 (19.1%)	29 (18.5%)	25 (15.9%)	21 (13.4%)
1947	190	0 (0.0%)	40 (21.0%)	59 (31.1%)	41 (21.5%)	25 (13.2%)	25 (13.2%)
1948	198	15 (7.6%)	44 (22.2%)	55 (27.8%)	41 (20.7%)	31 (15.7%)	12 (6.0%)
1949	139	13 (9.4%)	28 (20.2%)	33 (23.7%)	33 (23.7%)	26 (18.7%)	6 (4.3%)
Total	878	72 (8.2%)	209 (23.8%)	234 (26.7%)	156 (17.8%)	119 (13.5%)	88 (10.0%)

TABULATION OF RESULTS

Table 1 gives for each year, 1944 through 1949, the figures concerning the number of mares bred, the number which conceived, and the breeding percentage, which is indicative of the efficiency of the breeding operation. Also shown for each year is the number and percentage of mares which settled with one to seven services by fertile stallions. Over the six-year period covered by this report, 1,063 mares were bred and 878 conceived, a breeding percentage of 82.6. The conception rates, per service and for the entire year, are consistent throughout the time of these observations. The breeding efficiency for the entire period is equal to, or better than, the published and

In table 2, it is noted that the breeding percentages for the six years are comparable. In comparing one year with another in table 2, the inconsistency of monthly results is believed to be due to the these figures, it is evident that of the mares which will conceive during a given breeding season, about 94.9 per cent will become pregnant with three or less services by a fertile stallion. The other 5.1 per cent are the mares which require more care and attention in order to produce healthy foals.

Table 2 breaks down the number of pregnant mares for each year into those which conceived during each month of the breeding season.

*The highly purified preparation of gonadotropic hormones obtained from the blood of pregnant mares.

annual seasonal variations. As an example: The spring of 1947 was unusually late and, although a few mares were bred in April, none of them conceived during this month. The same is true of the late summer months; some years the rainfall was adequate to supply bountiful grazing; other years were dry and the pastures became burned and depleted during August and September to the extent that at times it was necessary to dry feed the mares. The total of the six years' breeding shows that 50 per cent of the mares settled during the months of May and June. It is generally agreed that the natural breeding season for horses is this season of the year while the pastures are at the peak of nutritive value and the daylight hours are the longest.

SUMMARY

The compilation of some of the horse-breeding data at the Upjohn Richland Farms, 1944 to 1949, is presented. Of the 1,063 mares bred, 878 (82.6%) conceived. Of the 878 mares in foal, 833 (94.9%) settled with one to three services. Of the 878 mares settled, 443 (50.5%) conceived during the months of May and June. From these records, it is presumed that the majority of mares which are in good reproductive condition will conceive with one to three services by a fertile stallion and that the optimum time for breeding mares in the Middlewest is during the months of May and June.

References

[1]Andrews, F. N., and McKenzie, F. F.: Estrus, Ovulation, and Related Phenomena in the Mare. Res. Bull. Univ. of Missouri Agric. Exper. Sta., No. 329, 1941.

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[3]Caslick, E. A.: The Sexual Cycle and Its Relation to Ovulation with Breeding Records of the Thoroughbred Mare. Cornell Vet., *27*, (1937):187.

[4]Trum, B. F.: The Estrus Cycle of the Mare. Cornell Vet., *40*, (1950):17.

Mink breeders have filed a claim before Congress in an attempt to get indemnity for breeding losses reportedly caused by feeding waste from hormone-tenderized poultry. A special congressional committee probing the matter has been given authority to make a further investigation of the use of drugs and chemicals in the production of foodstuffs and livestock.—*Am. Fur Breed., April, 1951.*

Hormone Therapy

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Veterinary Medical literature has of recent years included many articles on endocrinology. The male and female sex hormones have received a great deal of the attention. The following reports deal with the use of androgen therapy in both sexes.

Case 1.—The patient was a brindle, spayed, female Boxer, 18 months old, and in good health and flesh. The patient's major difficulty was that dogs were continually attracted to her. Part of the time she was receptive to the dogs, and on occasion demonstrated male inclinations, but in general she resisted their advances.

Her history showed that on May 10, 1950, she had her first estrus, which lasted about three weeks. On September 1, she was examined to determine whether she was in estrus again, as the owner reported that males were again attracted to the bitch. The external genitalia were slightly swollen but did not resemble estrus, and she was sent home after a few days' observation.

On Nov. 6, 1950, a bilateral oöphorectomy and hysterectomy was performed. The ovaries were found to be enlarged and to contain many pin-point cysts. The oviducts and uterus were swollen to twice their normal size. The patient made an uneventful recovery.

Subsequently, the owner and neighbors complained that the bitch and the dogs were still annoying the neighborhood. At times she resisted the attentions. Upon examination, the external genitalia were found to be slightly edematous, the clitoris was enlarged, the vagina hyperemic and there was a slight mucoid discharge. The bitch seemed to enjoy the internal examination.

On February 10, the treatment consisted of vaginal irrigation with a sulfanilamide, sulfathiazole, and urea solution in a propylene glycol base, but no improvement was noted. Two weeks later, 1 cc. of perandren containing 25 mg. of testerone proprionate was injected intramuscularly and 20 mg. of methyl testosterone was given orally. Instructions were to give 20 mg. of methyl

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testosterone orally for the next four days. However, after three days, the dogs in the neighborhood discontinued following the bitch. There has been no recurrence of the complaint as yet, and the owner reports that the bitch is quieter, gentler and a more satisfactory pet.

Summary and Discussion.—A Boxer bitch began to attract male dogs about five months after her first heat period. This attraction continued for about four months after an oöphorectomy and hysterectomy was performed but ceased almost immediately after the administration of an androgenic hormone.

At this time it is not known whether this treatment will have to be repeated. Time will tell.

Schnelle[1] stated that, in spayed bitches that constantly attract males and do not have a vaginitis or a section of ovary retained, the cause of this behavior is most likely "overstimulation of the pituitary gland." He suggests no treatment.

It is to be noted[2] that one of the physiological effects of the male hormone is the inhibition of the pituitary hormones. "The use of male sex hormone in gynecology . . . depends not only on the direct negating action of androgen on estrogen, but primarily on the suppression of pituitary hormones."

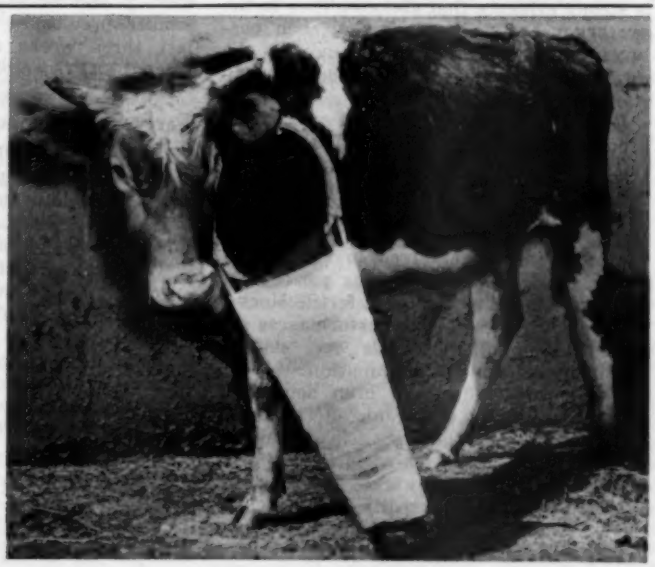
Case 2.—This is a further report of a case described as "Canine Eczema Due to a Hormonal Imbalance".[3] The dog referred to in this case report has received as therapy a daily dose of 10 mg. of methyl testosterone orally since October, 1947. There has been only one remission of the symptoms since the report was published. It occurred when the medication used was from a different commercial source. The symptoms were slight and disappeared rapidly when the drug from the original source was restored. This supplementary report is rendered because this dog, a 3-year-old monorchid when therapy was instituted, now has both testicles in the scrotum. The second testicle was first noted in the scrotum Dec. 18, 1950, two and one-half years after treatment was started. The dog is in excellent health, has a gorgeous coat, and there have been no undesirable side-effects detected as a result of the prolonged administration of this synthetic androgen.

References

[1]Schnelle, G. B.: Ovarian Remnant (?). North Am. Vet., *32*, (1951): 275.

[2]Medical Research Division, Schering Corp.: Sex Endocrinology. Schering Corp., Chicago, (1945): 65.

[3]Troy, M. A.: Canine Eczema Due to a Hormonal Imbalance. J.A.V.M.A., *115*, (1949): 357.



A valuable breeding bull wears an adaptation of the Thomas splint, which was applied at the veterinary clinic of the University of California. The splint is made of electric conduit tubing or aluminum alloy rod, is measured for height, and adjusted for traction. It is padded under the foreleg to give painless support and is anchored to the hoof.

—Acme Photo

Brucella in Fistula of the Withers

It has long been known that Bang's bacillus is associated with fistula of the withers and poll evil of horses. That it plays the role of the specific agent has been claimed but not proved. To turn light on the subject, Macri (*Profilassi*, Sept.-Oct., 1950) investigated its supposedly specific nature in regions where epizoötic abortion among cows was prevalent. He studied 100 affected horses of different breed, sex, and age: 96 with fistula of the withers and 4 with poll evil. Complement fixation, agglutination, and bacteriologic tests, in respect to *Brucella abortus*, were made. Of the 100 horses examined, only 14 gave positive reactions to the serologic tests, and bacteria of the Brucella type were isolated in only 11. The obvious conclusion is that while Brucella seem to have a favoring action, traumatic injury can not be ruled out.

Estrogenic Effects on the Ewe when Grazing on Subterranean Clover

A breeding problem of sheep maintained on pastures dominated by the "dwalganup" strain of subterranean clover was shown to be characterized by three main clinical manifestations in the ewe: infertility, maternal dystocia, and uterine prolapse. There is strong evidence that abnormalities in the sex organs of wethers grazing such pastures resulted from the presence in the clover of an estrogenic substance or substances.

Experiments are described in which groups of Merino ewes of different ages, raised on properties where the pastures were dominated by the "dwalganup" strain of subterranean clover and where the flocks were severely affected with infertility and dystocia, were transferred to sound non-clover grazing. After varying periods the ewes were mated with active, fertile Merino rams and their breeding performances assessed. A number of ewes were slaughtered for pathological examination.

The results indicate a high degree of permanence of the estrogenic effects of the clover grazing on the ewe. No significant or measurable improvement in their breeding performance at any age, as shown by the incidence of infertility, dystocia, or birth of dead lambs, was found after one, two, or three successive seasons on non-clover grazing. The uterine lesions (cystic endometrium) were also found to be highly permanent.

The results from the different age groups indicate that ewes may become slightly affected at an early age (4 to 5 months), but the effects become progressively more severe with each year of grazing on subterranean clover-dominant pasture.

The results indicate further that the infertility is not due to a failure of estrus but to a failure to conceive, and that infertility and dystocia are different degrees of manifestations of the same disturbance of the reproductive system.—*Austral. Vet. J., 27, March, 1951: 63-67.*

The Leucocytes During Pregnancy

Current interest in this subject has been stimulated by the reports on the reduction in the number of circulating lymphocytes observed in experimental animals.

The findings, all evaluated statistically, with respect to the total white, neutrophil, and lymphocyte counts during normal pregnancy are in agreement with those published already, *i.e.*, there is a leukocytosis, due mainly to a neutrophilia during pregnancy and labor, with labor characterized by a more marked leukocytosis and neutrophilia, and also a lymphocytopenia. However, a significant lymphocytosis, not described previously, is observed during the last three weeks of pregnancy.—*Am. J. Obstet. and Gynecol., May, 1951.*

Early Spontaneous Delivery of Bovine Fetal Mummies

Bovine fetal mummification is relatively common in dairy cattle. Recently, 2 cases of early spontaneous delivery of fetal mummies have been observed in dairy cows.

These 2 cases at 208 and 184 days, respectively, after breeding are marked examples of exceptions to the general statement of expulsion occurring at, or shortly after term, whether the expulsion is spontaneous or is aided by intervention by an obstetrician.—*Canad. J. Comp. Med. and Vet. Sci., May, 1951.*

Two sets of living equine twins were foaled recently in Pakistan, according to the *Journal of the Royal Army Veterinary Corps*. Both pairs developed normally.

CLINICAL DATA

Some Aspects of the Epizoötiology of Histoplasmosis in Two Boxer Breeding Kennels

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HISTOPLASMOSIS is an intracellular fungus infection to which both man and lower animals are susceptible. The disease and the morphology of the causative organism were first described by Darling, in 1906, when he reported several cases in natives of panama.

LITERATURE CITED

After a microscopic study of the organism, Darling[4] concluded that it was a protozoön related to the Leishmania and called it *Histoplasma capsulatum*. In 1912, Da Rocha-Lima[5] decided, after studying some of Darling's sections, that the organism was probably a fungus rather than a protozoön. DeMonbreun[6] was the first to grow the organism on artificial medium, and he proved that it was a fungus. In 1939, the first recognized case of spontaneous histoplasmosis in a dog was described by DeMonbreun.[7] The subject was a 3-year-old Boston Terrier from Nashville, Tenn. Most of the small laboratory animals can be experimentally infected with *H. capsulatum*, but species and individual susceptibility vary considerably.

Since 1939, approximately 25 cases of spontaneous canine histoplamosis have been reported in the literature. An additional 21 such cases have recently been studied at Vanderbilt University. The incidence of histoplasmosis seems to be greatest in the brachycephalic dogs, but infections also occur in dogs of other types. There is no satisfactory explanation for this apparent type-susceptibility. Emmons *et al.*[8,9,11] have isolated *H. capsulatum* from spontaneous infections in dogs, domestic cats, house mice, wild rats, skunks, and opossums in Virginia and Georgia. These workers suggest that geographic areas may be effectively sampled for the presence of *H. capsulatum* by adequate examinations of cats and rats in the region. Akun[1] recently reported the disease in a domestic cat in Turkey.

The majority of reported cases of histoplasmosis in man and in dogs has originated in the United States, but many have been recognized in other parts of the world. Cole, Prior, and Saslaw[2] reported a series of 1,314 dogs skin-tested with histoplasmin in Columbus, Ohio, with 7 reactors. Four of these were proved to be active cases of histoplasmosis, and 2 of the 4 apparently recovered.[10]

Little definite information is available on the means by which *H. capsulatum* is acquired by the host. Olson, Bell, and Emmons[14] were able to isolate the organisms in pure culture from ticks soon after they had been permitted to feed on infected dogs. Emmons[11] examined more than 400 soil samples and isolated *H. capsulatum* from 6 of them by means of mouse inoculation. In each instance, the positive soil samples originated on premises from which animals infected with histoplasmosis had already been found. Emmons and Ashburn[9] reported finding an infected mouse in a household which had previously held an infected dog. Para[13] reported finding histoplasmosis in a child and in a dog in the same household in Brazil. McLeod *et al.*[12] reported concurrent cases of disseminated histoplasmosis in two brothers. One case developed several months before the other, and the children had extremely close contacts in the home, including sleeping together, during this period. The possibility of direct transmission was mentioned in connection with the second case. In 1946, Seibold[15] reported histoplasmosis in 2 Pit Bull Terriers from Arlington, Va. The first case was discovered in a 2½-year-old male, and the disease later developed in a 1½-year-old female which was a daughter of the first dog. Conant *et al.*[3] suggest the possibility that dogs or other domestic pets may serve as carriers in a locality, or that other foci about the premises may serve as sources of infection for both dogs and children. Attempts to recover the causative organism from the stools of 5 disseminated cases of histoplasmosis in dogs were successful in every instance, *H. capsulatum* being present in the feces

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An abstract of a portion of a dissertation submitted in partial fulfillment of the requirements for the Ph.D. degree, Vanderbilt University, 1951 (Robinson).

The authors express appreciation to Drs. W. O. Green and J. N. Sibley, Nashville, Tenn., for their coöperation in these studies.

of these dogs in extremely large concentrations." There is no convincing evidence, however, that the disease is transmitted directly from an infected individual to susceptible ones. Most of the previously reported cases of histoplasmosis in both man and lower animals have been widely separated.

A DISEASE HISTORY OF THE KENNELS

There are two Boxer breeding kennels in Nashville, Tenn., which have had serious outbreaks of histoplasmosis during the last four years. A study has been made of some of the aspects of the epizoötiology of these outbreaks. It has not been possible to obtain complete information on each litter, but enough data have been assembled to make possible an interesting over-all picture. In this report, cases are considered proved when *H. capsulatum* is isolated from the case by culture, or when the organisms are so numerous and characteristic in microscopic sections that there is no question as to their identity. When a date is stated as "the present time" it refers to January, 1951.

KENNEL 1

This breeder has been raising dogs since 1934. He bred Pointers until 1939, but since then had raised only Boxers. Breeding activities were suspended in 1942 until after the war. There was no evidence of histoplasmosis associated with the kennel until the postwar breeding program was revived.*

The first litter in which histoplasmosis was suspected was whelped by a bitch named Roxie, April 5, 1946. One male in this litter became chronically ill and died in January, 1947. The clinical history and postmortem findings, recalled by the owner, were typical of histoplasmosis but it was not suspected at the time. The postmortem examination was performed by a veterinarian. No microscopic or cultural studies were made. No information is available on the other dogs in this litter. Roxie died in March, 1947, of a neoplastic disease.

A bitch named Lady was procured from eastern Iowa in 1941. On April 18, 1946, Lady whelped a litter of 8 puppies on a dirt floor of a new garage. Two males, sent to Franklin, Tenn., died of a chronic disease of similar nature when about 6 months old. Dr. Fred G. Schell performed a postmortem examination on 1 of them. Blocks of tissue from the greatly enlarged mesenteric lymph nodes were preserved in formalin, and the case was proved to be histoplasmosis by one of the authors (Robinson) at Vanderbilt University four years later. This was the first case of proved histoplasmosis to come from this kennel. A bitch named Hilda is the only other member of this litter that can be accounted for.

On Sept. 16, 1948, Hilda whelped 6 puppies, her first litter, in deep dust in an outside kennel run. Three puppies remained in the vicinity of Nashville, while Hilda and the other 3 puppies were sent to Columbus, Ohio, in November, 1948. Two of the puppies that went to Ohio died of chronic diseases compatible with histoplasmosis on Jan. 23 and Feb. 3, 1949. The third puppy became ill in February, 1949, and was found to have histoplasmosis by Drs. Cole, Prior, and Saslaw at Ohio State University. Hilda was negative to the histoplasmin skin test in August, 1949. All of Hilda's puppies that remained in Nashville had died of proved histoplasmosis by the time they were 4 months old. Hilda is now in Nashville, and has a litter of 6 newborn puppies. The mother and all the puppies appear normal.

In January, 1947, Lady whelped a second litter of 6 puppies on straw bedding in a kennel house with a board floor. Two of the males died of a chronic disease typical of histoplasmosis when about 6 months old, but a definite diagnosis was not made. Three were alive in July, 1950. A female named Queen was retained at the kennel for breeding.

On June 25, 1948, Queen delivered 4 puppies in deep dust in an outside kennel run. One male was in poor physical condition when 3 months old and died under general anesthesia at the time the ears were trimmed. The other 3 died between the ages of 4 and 5 months. All 4 had clinical histories compatible with histoplasmosis, but none was proved. In the fall of 1948, Queen had a severe persistent diarrhea, became emaciated, and developed other symptoms typical of histoplasmosis. She was finally moribund, and was subjected to euthanasia in December, 1948, without microscopic or cultural studies.

On Jan. 25, 1948, Lady had a third litter of 6 puppies. One died when about 6 months old with symptoms compatible with

*This study was initiated by Dr. Michael Furcolow, Sr., surgeon in charge, Investigation Section, U.S. Public Health Service, and much of the data pertaining to kennel 1 was generously supplied by him.

histoplasmosis but the case was not proved. One male that died was a clinical case of Dr. W. O. Green of Nashville. He sent the internal organs to Ashe Lockhart, Inc., Kansas City, Kan., for diagnosis. The material was referred to the U. S. Public Health Laboratory, University of Kansas Medical Center, Kansas City, Kan. for cultural studies. A diagnosis of histoplasmosis was made by Drs. Furcolow and Ruhe of that Laboratory. One member of the litter died in June, 1948, of a disease resembling histoplasmosis but it was not proved. The other 2 dogs died of acute unidentified diseases.

In March, 1949, Lady whelped a fourth litter of 3 puppies in a kennel house with a board floor. Two males were sent to different localities in northeast Alabama. One of the males became ill in November, 1949, and a large tumor-like mass was palpated in the abdomen. A biopsy from the enlargement, secured by an exploratory laparotomy, revealed numerous organisms and lesions typical of histoplasmosis. A diagnosis of histoplasmosis was made from microscopic tissue sections at Vanderbilt University. The dog died while still under general anesthesia. The other male became ill in December, 1949, with chronic diarrhea, irregular appetite, and gradual weight loss. He was negative to the histoplasmin skin test two weeks before he died, in March, 1950. Bone marrow films and blood cultures obtained at the same time were positive for *H. capsulatum*. The dog finally became moribund and the owner requested euthanasia. No information is available on the female that went to Indiana.

Another interesting factor in the outbreak of histoplasmosis associated with this kennel is the incidence of the disease in mature females soon after a visit to the kennel for breeding. During 1949 and 1950, approximately 33 females visited the kennel for breeding. Three of this number developed histoplasmosis soon after one of these visits. The first recorded case was a 4-year-old bitch from Lebanon, Tenn., and the only contact she had with the kennel was a one-week visit for breeding. This service did not result in conception. About two months later, she became chronically ill, and after she became moribund the owner requested euthanasia. A diagnosis of histoplasmosis was made from tissue sections and from cultures.

The second case in an adult female after contact was from Nashville. She was 3 years old and her only contact with the kennel was a one-week visit for breeding. She, too, failed to conceive, and it was later

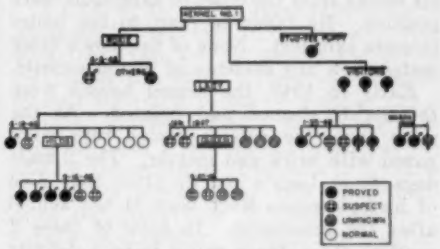

Fig. 1—Chart showing known and suspected infections in dogs associated with kennel 1. Note: When the sex of the individual is not indicated, it is not known.

found that the stud was not virile. She became chronically ill about six weeks after leaving the kennel. The histoplasmin skin test was negative, but bone marrow films and blood cultures secured on the same date were positive for *H. capsulatum*. She became moribund and euthanasia was performed after an illness of five weeks.

The third case after contact with the kennel was a 2-year-old female from Hartsville, Tenn. Her first contact with the kennel was in November, 1949, when she visited it for one week for breeding. This breeding did not result in conception and she remained in normal physical condition. In May, 1950, this female again visited the kennel for one week for breeding and this time conceived. The first weight loss was observed by the owner about two weeks before the puppies were born. A litter of 5 puppies was whelped without incident, and she nursed them until weaning age. When the puppies were 6 weeks old, she was presented at Dr. W. O. Green's Veterinary Hospital for medical attention, and histoplasmosis was suspected. Stained bone marrow films and blood cultures were positive for *H. capsulatum*, but the histoplasmin skin test was negative. All the puppies were alive and developing normally in January, 1951.

Approximately 8 stud-fee puppies have come to the kennel during the last three years and remained there for periods ranging from a few days to several weeks. One

such male puppy was raised in Columbia, Tenn., and came to the kennel for a two-week stay immediately after weaning. He had a normal history until he was 17 months old, when he became chronically ill. Stained bone marrow films and blood cultures taken six weeks after the onset of symptoms were positive. He failed to react to the histoplasmin skin test. None of this dog's litter mates show any evidence of histoplasmosis.

Early in 1949, the kennel houses were thoroughly cleaned and painted. At the same time, the outside kennel runs were paved with brick and mortar. The 2 male dogs from Lady's fourth litter that died of histoplasmosis were born at the kennel after the renovation. In spite of these 2 positive cases, there seems to be a definite decrease in the kennel-associated cases. In September, 1950, 8 Boxers of both sexes and all age levels at the kennel were skin-tested with histoplasmin and there were no positive reactors. A recent slow-down in breeding activities may partially account for this apparent decrease in disease incidence.

KENNEL 2

The first dog owned by this breeder on the present premises, a female Boxer named Inky, was procured in 1946 and delivered her first litter Jan. 11, 1947. There were 9 puppies in the litter and only 4 survived.

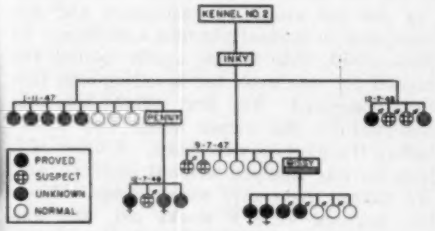

Fig. 2—Chart showing known and suspected infections in dogs associated with kennel 2. Note: When the sex of the individual is not indicated, it is not known.

One of the survivors, a female named Penny, remained at the kennel for breeding. None of those that died had symptoms resembling histoplasmosis.

Penny visited kennel 1 for breeding and whelped a litter of 4 puppies Dec. 7, 1948, in a kennel house with a dusty dirt floor. One female died of an unidentified disease when 4 months old, and another female was sent away from Nashville and can not be traced. A male named Unk was ill with symptoms of histoplasmosis when about 5 months old and recovered. He has remained at the kennel and is now in excellent physical condition. Unk was positive to the histoplasmin skin test in March, 1950, and was negative to the same test the following September. A female named Tippy remained in Nashville; Penny is still alive and apparently in good health.

Tippy gave birth to 6 puppies in March, 1950. When they were about 7 weeks old, the dam became ill with proved histoplasmosis and died after an illness of approximately seven weeks. Three of Tippy's puppies were skin-tested with histoplasmin when they were about 12 weeks old and 1 was positive. Organisms were not recovered from the blood of any of the 3 puppies by culture. None of the puppies in the litter has shown symptoms of histoplasmosis.

On Sept. 7, 1947, Inky whelped a second litter of 7 puppies on the dirt floor of a basement and remained there until they were weaned and sold. Two of these puppies died when about 6 months old, following a disease syndrome compatible with histoplasmosis, but no microscopic or cultural studies were made. One female named Missy had a disease resembling histoplasmosis when about 4 months old and recovered. Missy is the only survivor from the litter. Histoplasmosis was not suspected in any of the other 4 that died.

In January, 1950, Missy whelped 7 puppies. All were apparently normal until they were about 7 months old. One male then became ill with proved histoplasmosis and died six weeks later. By the time the puppies were a year old, a total of 4 had died of the disease. All 4 cases developed in widely separated localities in Nashville. The latest case was in a male which had been retained by the owner of Missy. None of the 4 puppies had visited either kennel 1 or kennel 2, and none of the first 3 had visited their birthplace since weaning time. The 3 present survivors from the litter appear to be in good health.

In September, 1950, Missy delivered a second litter within a few days of term by cesarean section. All the puppies had obviously been dead for several days, but the

owner had observed no signs of labor. A few days after the operation, Missy developed typical clinical manifestations of histoplasmosis. She was not available for cultural or other studies at that time and she recovered after an illness of a few weeks. Three months after this episode, Missy's blood cultures were negative for *H. capsulatum*, but her serum contained complement-fixing antibodies. Histoplasmosis was not suspected at the time of the cesarean section, and no attempt was made to recover organisms from intrauterine material.

On Dec. 7, 1948, Inky delivered a third litter of 4 puppies. She had also visited kennel 1 for breeding for this litter. The puppies were whelped in a kennel house with a dusty dirt floor. One male was proved to have histoplasmosis by Drs. Peterson and Middleton at Vanderbilt University, and it died four weeks after symptoms were first observed. One male became chronically ill when 11 months old and died a month later. The clinical history was compatible with histoplasmosis but the case was not available for diagnostic study. Another male had symptoms resembling histoplasmosis when about 5 months old and recovered. The female was sent away from Nashville and can not be traced. Inky is alive and was negative to the histoplasmin skin test in September, 1950.

SUMMARY AND DISCUSSION

In kennel 1, approximately 35 puppies have been born since 1946. Twenty-one (60%) of these are known to have died of causes other than accidents, and there are many on which no information is available. Eight of the deaths (22% of the total) are known to have been caused by histoplasmosis. Many of the others, including one entire litter, had clinical histories compatible with histoplasmosis. One stud-fee puppy stayed at the kennel about two weeks and developed histoplasmosis several months later. Approximately 33 females visited the kennel during 1949 and 1950 for breeding and 3 of these developed histoplasmosis soon after the visit.

In kennel 2, 24 puppies have been born since 1947. At least 10 (41 %) are known to have died of causes other than accidents. Two (8% of the total) died of proved histoplasmosis, and at least 2 others died with symptoms compatible with histoplasmosis but without positive diagnostic studies. At least 3 others have had chronic diseases resembling histoplasmosis and have recovered. Four first-generation litter mates have died of histoplasmosis between the ages of 8 and 12 months.

A total of 18 deaths from proved histoplasmosis has occurred in Boxers associated with these two kennels during the period covered by this study. These were equally divided according to sex — 9 males and 9 females. Thirteen (72%) deaths were in dogs less than 1 year old. The ages of the other 5 ranged from 18 months to 4 years.

Evidence produced by this study indicates the probability of susceptible individuals contracting histoplasmosis after contact with infected premises. In these two kennels, the disease seems to be most devastating in litters whelped and raised in extremely dusty quarters. The history of Missy's first litter, and perhaps others, points to the possibility that, in some instances, adult dogs may be carriers and disseminators of the organisms while showing no symptoms of histoplasmosis themselves. Dogs with active disseminated histoplasmosis are known to shed large numbers of organisms in the stools, and this may also be true of individuals with certain benign and carrier forms. Evidence resulting from these studies does not eliminate the possibility of prenatal infections from the mother in some instances. It is felt that this segment of the problem deserves further investigation. There is considerable evidence to indicate that puppies may become infected with *Histoplasma capsulatum* before weaning time and show no clinical evidence of disease until several months later. This phenomenon is paralleled to some extent by certain tuberculosis infection in children. Two mature females developed proved histoplasmosis and another had symptoms typical of the disease soon after termination of a term pregnancy by cesarean section. This may suggest an important relationship between lowered physical condition and increased individual susceptibility to histoplasmosis.

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Edema Disease of Swine

Edema disease of swine, which has attracted considerable attention within recent years among the farming communities in Ireland and in parts of England and Wales, is an entity of great interest to the epizoötiologist, because it represents a disease which in the immediate prewar years was of minor importance, whereas in the postwar years it became a major affection of swine.

The most characteristic symptom and the one by which the disease is most easily recognized by both veterinarians and pig owners is the staggering gait. This symptom is so characteristic that outbreaks can be clinically diagnosed with a high degree of accuracy.

Its economic importance lies in the fact that (*a*) it is a common disease of pigs in most counties; (*b*) the incidence and mortality in individual litters are generally high; (*c*) it affects pigs when they are of considerable market value; (*d*) the small breeder, the mainstay of the pig industry, often suffers severe losses; (*e*) it has a retarding influence on the expansion of pig production; (*f*) there are at present no specific prophylactic or curative measures which can be adopted in the prevention or cure of the disease.

A very frequent history in outbreaks of this disease is that 1 or 2 pigs have been found dead in the morning, although they had appeared normal and fed as usual the previous evening or night. The symptoms quickly progress from an initial swaying movement in the hind quarters to a marked staggering gait, followed by loss of control of either the hind or the fore limbs. These symptoms rapidly progress within a few hours until the paralysis of either the hind or fore limbs is complete. Finally, complete paralysis of all limbs sets in and the animal is unable to move from the lying position even when urged.

Swelling of the eyelids, particularly of the upper eyelid, is a conspicuous symptom when well developed and is present in the majority of cases.

Protrusion of the eyeballs has been seen in some animals.

Various nervous symptoms which have been observed in some cases are:

Some degree of hyperexcitability is observed in the early stages.

A very noticeable symptom when present is the alteration of the voice, the normal squeal becoming hoarse, sometimes resembling a bark.

In many cases before death, there is reddening of the skin on the abdomen and inside of the thighs and forearms.

Constipation is a marked feature of most cases. In a small number of cases, however, there is evidence of diarrhea, sometimes hemorrhagic in nature. Vomition has been occasionally noted.

Temperature reactions recorded in established

This is an abstract of an article in the IRISH VETERINARY JOURNAL (May, 1951) entitled "Oedema Disease of Swine" by J. F. Timoney.

cases of edema disease are practically always normal or subnormal.

A salient feature of the vast majority of outbreaks of this disease is the sudden onset of illness affecting a number of animals in rapid succession, many of which are affected simultaneously, followed by an abrupt termination. The mortality is usually over within four to five days from the first appearance of the disease, and as a general rule no further cases of illness appear in the litter.

At autopsy, the peritoneal cavity almost invariably shows some excess of peritoneal fluid. Fibrin threads in the peritoneal cavity are nearly always present.

The serosal aspect of portions of the exposed walls of the coils of the colon is sometimes bright red and roughened. In a high percentage of cases the colonic mesentery binding the coils of the colon together shows varying degrees of distension with a clear gelatinous-like fluid which extends inwards between the coils.

The peritoneal covering of the stomach occasionally shows a reddened patch near the cardiac extremity.

The stomach contents of swine are generally dry and are present in large amounts. A very high percentage of cases shows a portion of the gastric wall is thickened by the presence of edema, the extent of which is variable, ranging from a very thin layer a few inches in length to a layer ¾ inch or more at its thickest part and occupying the greater part of the cardiac zone.

The predilection site for the edema lesion is the submucosa of the cardiac zone.

The mucous membrane of the small intestine may appear normal or show changes, varying from scattered, diffuse, patchy areas of congestion or reddening of the longitudinal ridges of mucous membrane to intense and confluent reddening of the whole or portion of the bowel with hemorrhagic staining of the contents.

In cases where edema of the mesentery is pronounced, the walls of the spiral portion of the colon are sometimes thickened, due to edema of the submucosa. The mucosa itself often appears to be involved in this process.

The wall of the rectum is sometimes edematous and frequently shows marked reddening of the longitudinal ridges or plum red discoloration of the mucous membrane at the terminal for 3 to 4 inches.

It has been observed that intestinal lesions may be absent in the small intestine and present in the large intestine, or vice versa, or present in both small and large intestines.

The spleen, liver, and kidneys show no macroscopic changes.

Although not very extensive, this work tended to show that the disease was not one which could be reproduced experimentally by the usual laboratory methods and no clue was provided as to the most profitable line of approach.

Technique for Continuous Intravenous Infusion in Large Animals

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No satisfactory method for continuous intravenous medication of large animals has been in common use.

Recently, largely due to the development

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Fig. 1—Plastic tubing taped to coiled piano wire so that it adjusts to movement of the cow during transfusion.

of plastic tubing of "pencil-lead" size, this field of therapy has been opened to the large animal veterinarian on a practical basis.

The technique of passing the plastic tubing, known as the Kingma Infusion Tube, through a 12-gauge, 1¼-in. needle and then removing the needle, leaving the tube in the skin, is simple. The only problem lies in adapting the remainder of the necessary equipment to the movements of the animal. This is done with the use of 11 ft. of 22-gauge, coiled piano wire. This is springy and readily follows the movements of the cow. One end is hooked over the bail on a 1-liter infusion bottle and the other end is taped to the halter on the cow (fig. 1). The cow should be tied with about 4 ft. of halter rope. A venopac tube, which is 5 ft. long, is taped at 6-in. intervals to the upper end of the wire. Five feet of similar gauge rubber tubing is used to extend the tubing to the lower end of the piano wire. A needle adapter and 22-gauge needle are placed on the lower end of the tubing. Twenty-eight inches of infusion tubing is attached to the needle by forcing it ⅜ to ½ in. over the end of the needle (fig. 1,2).

Fig. 2—The tubing in place during transfusion.

The entire apparatus is filled with the solution to be administered. The 12-gauge needle is inserted downward in the vein and the plastic tubing is inserted through the lumen of the needle. The 12-gauge needle is then removed. The setup is then separated momentarily at the junction of the infusion tubing and the 22-gauge needle to permit the 12-gauge needle to be slipped off. The tubing is reconnected and the procedure completed.

The possibilities of treatment using this equipment and technique are numerous. As examples, we can cite the following: It is now possible to get remarkable recoveries in acetonemia cases through the infusion of 3,000 to 4,000 cc. of 50 per cent dextrose over a period of forty-eight to seventy-two hours. Severe cases of metritis have responded favorably to the continuous infusion of antibiotics in saline and dextrose and amino acids. Favorable results also have been obtained in cases of septic mastitis, forage poisoning, and septicemia. These cases were all unattended except for having the owner change the liter bottles when needed at 8- to 12-hour intervals.

Zoönoses.—Zoönoses are those diseases which are naturally transmitted between vertebrate animals and man. A list of the zoönoses comprising more than 80 diseases has been compiled. The field of zoönoses is one of the major branches of veterinary public health and includes the etiology, pathogenesis, diagnosis, transmission, and control of these diseases.—*Joint WHO-FAO Expert Group on Zoönoses, Series 40, No. 15, May, 1951.*

Lead arsenate in ½-Gm. doses (ordinary spray grade) for lambs and 1-Gm. doses for sheep is the treatment of choice for the removal of tapeworms.—*A. O. Foster, Ph. D., U. S. BAI, Beltsville, Md.*

Chemotherapy of Bovine Mastitis with Furacin and Penicillin Mixture

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Newark, Delaware

CHEMOTHERAPY in bovine mastitis was placed on a sound basis when it was established that intramammary infusions of sulfanilamide[1,2] gave higher therapeutic results than oral or parenteral administrations. Prior to the use of sulfanilamide, various chemical agents were introduced into the udder of the cow for the purpose of effecting cures by attempting to eliminate the infectious agents from the udder tissue. A serious disadvantage of this method of administering chemotherapeutic agents was the severe inflammatory reactions which resulted from the irritating properties of either the drug or the vehicle. In some instances, the reactions were so severe as to cause permanent tissue injury to the parenchyma, resulting in nonfunctioning glands. Furthermore, these agents were contraindicated in clinical cases of mastitis, and manufacturers warned against intramammary infusions during the acute stages.[3] It has been demonstrated[1,2,4] that sulfanilamide-in-oil preparation may be used in either the acute or chronic stages of the disease. Intramammary infusions of penicillin[5] solution were also found to be chemotherapeutically effective and nonirritating to the udder tissue. The therapeutic effectiveness of sufanilamide and penicillin against *Streptococcus agalactiae* and other streptococcic infections has been amply demonstrated.

As a result of the wide use made of these agents, streptococcic infections, and especially *Str. agalactiae* infections, have been reduced appreciably; and in herds where organized programs have been put in operation, the *Str. agalactiae* infections have been completely eliminated. In many instances, however, drug-resistant strains developed which persisted despite prolonged treatment. Strains which are sensitive to sulfanilamide in concentration of 100 mg./-100 ml. at 37 C. will become more resistant and will grow in a medium containing 1,000 mg./100 ml. of sulfanilamide. Futhermore, it is a common observation that with the decrease in streptococcic infections, other organisms, such as Staphylococcus, Pseudomonas, Escherichia and other gram-negative enteric bacteria, have gained prominence as infectious agents in acute and chronic mastitis.

Since the number of effective chemotherapeutic agents against the various organisms which cause bovine mastitis is limited, our laboratory has been engaged in testing various drugs for the purpose of adding to the present small list of chemicals that can be used effectively in mastitis.

Since the mammary gland of the cow is more sensitive to chemicals and their vehicles when administered as udder infusions than through any other route, it is essential that such agents must be of low toxicity, must be effective bactericides against several bacterial species of mastitis significance, must not affect normal milk production during and after treatment, and must not be contraindicated in the treatment of acute phases of mastitis. This report deals with the application of furacin solution veterinary® and penicillin used in combination in the treatment of bovine mastitis having the following etiological agents: *Str. agalactiae, Micrococcus pyogenes* (pathogenic staphylococci), *Escherichia coli*, and *Pseudomonas aeruginosa*.

MATERIALS AND METHODS

In evaluating any chemotherapeutic agent for the treatment of bovine mastitis, the method of diagnosis must take into account not only the clinical manifestation of the disease and the apparent changes in the chemical and physical properties of the milk but, perhaps more significantly, it should determine by reliable diagnostic methods the presence and type of the infectious agent. It has been demonstrated[6] that the blood agar plate is the most reliable method for the diagnosis of

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This study was supported by the Haskell Research Foundation, University of Delaware, Newark. Furacin solution veterinary and penicillin used in this study were supplied by the Eaton Laboratories, Inc., Norwich, N. Y.

bovine mastitis. By direct plating of the fresh milk sample, one obtains a measure of the degree of infection by noting the number of colonies developing, and one may also determine the specific nature of the infectious agent by isolating and identifying the organism.

Milk samples were collected from each quarter and as soon as they were brought to the laboratory, they were plated on tryptose blood-agar plates of the following composition:

Medium for Plating

Bacto-tryptose	20.0 Gm.
Bacto-dextrose	2.0 Gm.
Na_2HPO_4	8.0 Gm.
NaCl	2.5 Gm.
Agar	15.0 Gm.
Distilled water	1.0 liter

The hydrogen-ion concentration of the medium was adjusted to pH 7.4 and then the medium sterilized in the autoclave at 15 lb. steam pressure for fifteen minutes. Ten per cent citrated ox blood was added to this medium and then poured into Petri dishes. The blood plates were incubated overnight at 37 C. to dry the moisture on the surface of the agar and to insure sterility.

Milk samples were collected individually from each quarter prior to the evening milking. The blood plate was divided into quadrants and, with a sterile loop, 0.01 ml. of the milk from each quarter's sample was streaked on each quadrant. The plates were then incubated at 37 C., and they were observed after twenty-four hours and again after forty-eight hours. The hemolytic and nonhemolytic streptococci were identified by means of the rapid plate agglutination method. This technique is simple and rapid in execution and accurate in identification of readily emulsifiable strains. The method is as follows: Rabbit diagnostic serums are prepared against *Str. agalactiae*, *Streptococcus uberis*, and *Streptococcus dysgalactiae* according to the Lancefield method[7]. For the agglutination test, the high titer serums are diluted with 1:20 with 0.5 per cent phenolized physiological saline solution and are stored in the refrigerator until needed.

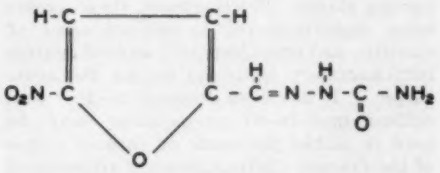
One drop (0.05 ml.) of the diluted diagnostic serum was placed in the depression of a Kline concavity slide and a similar amount of phenolized saline solution was placed in another depression, and by means of an inoculating needle, one or two colonies of the streptococci were removed and thoroughly emulsified with the serum, as well as with saline control. A homologous organism will agglutinate within fifteen to thirty seconds. If agglutination takes place in the serum and not in the saline control, the organism is identified in accordance with type of serum which was used to elicit the agglutination reaction. If the organism is autoagglutinable or if it does not agglutinate with any of the diagnostic serums, it is isolated and identified by means of physiological reactions. The rapid agglutination technique has been found reliable and lends itself to routine diagnostic work which obviates the need for conducting the time-consuming physiological reactions.

The staphylococci are considered of mastitis significance when they appear in large numbers on blood agar plates and when they are positive to the blood plasma coagulate test.[8] The test is performed by inoculating diluted rabbit blood plasma with one or two colonies taken from the blood agar plates. The tubes are incubated at 37 C. and they are read after four hours and again after twenty-four hours. Hemolytic staphylococci are generally coagulase-positive. In many instances, however, nonhemolytic staphylococci are also coagulase-positive and, therefore, they are considered pathogenic.

Other organisms of the Escherichia-Aerogenes group, as well as Pseudomonas, are isolated and identified by means of physiological reactions. As indicated in this report, several cases of *E. coli* and *Ps. aeruginosa* infections were found in the herds reported in this study.

FURACIN-PENICILLIN MIXTURE

Furacin, a brand of 5-nitro-2-furaldehyde semicarbazone (nitrofurazone N. N. R.), is a synthetic compound derived from furfural and having the following structural formula:



Dodd and Stillman[9] demonstrated that furacin possesses bacteriostatic properties against several gram-positive and gram-negative pathogenic bacteria. *In vitro* tests against bacteria of bovine mastitis origin demonstrated that furacin has bacteriostatic and bactericidal properties against these organisms. A detailed study on *in vitro* activity of furacin and organisms of mastitis significance will be the subject of a separate report. Since the solubility of furacin in water is very low (1:5,000), the research staff of the Eaton Laboratories has found that the solubility of furacin is increased tenfold if it is dissolved in carbowax solution of the following composition:

Carbowax 1,500	65%
Distilled water	35%

The furacin is dissolved in the above carbowax solution in 0.2-per cent concentration

and it is designated as furacin solution veterinary. This makes a sterile product which may be stored at room temperature without loss of activity. The use of furacin in the treatment of bovine mastitis has been reported by Mires[10] whose data were based on clinical recoveries. He reported that good results were obtained in 78 per cent of cases with acute, clinical mastitis.

Preliminary studies on the use of furacin alone and in combination with penicillin demonstrated that there was an additive therapeutic effect when these chemicals were infused into the udder together than when either was given alone. As a result, the following preparation was used in all the cases reported in this study. To the furacin solution veterinary (0.2% furacin in carbowax), sodium penicillin G was added so that 1 ml. of furacin solution contained 2,000 units of penicillin. This mixture was prepared by withdrawing 10 ml. of furacin-carbowax solution from a 500-ml. bottle and inserting it into a vial containing 1,000,000 units of penicillin powder. After thorough shaking, the penicillin goes into solution readily and, by means of a syringe, it is transferred to the 500 ml. of furacin solution. The stability of penicillin in the furacin solution was determined by Yurchenco and Piepoli[11] and it was found that penicillin remains relatively stable when stored at 10 C. for twenty-eight days or at 25 C. for eight days.

DOSAGE AND FREQUENCY OF TREATMENT

The dose treatment consisted of infusing, after the quarter is milked out, with 25 ml. of furacin-penicillin mixture. This amount contains 50 mg. of furacin and 50,000 units of penicillin. The solution was allowed to remain in the quarter for twenty-four hours, at which time it was milked out; the treatment was repeated on the second and the third days. Three daily treatments at 24-hour intervals constituted one course treatment. If a quarter did not respond to one course of treatment or became reinfected, it received another course treatment consisting of three daily doses at 24-hour intervals.

REACTIONS

Observations made on more than 500 treatments revealed that furacin solution is nonirritating to udder tissue. Whereas many chemotherapeutic agents have been found to be contraindicated in the treatment of either mild or acute clinical cases, furacin solution has been used in acute cases and it was found to be well tolerated. In fact, the dose may be doubled in clinical cases to increase the drug concentration. In all the cases reported in this study, no unfavorable reaction resulted from the infusion of furacin solution veterinary-penicillin mixture. From the data so far obtained, it may be deduced that furacin may be infused into the udder either in chronic or acute stages of mastitis without danger of udder tissue reaction.

RESULTS

The therapeutic effectiveness of any chemical agent in the treatment of bovine mastitis can be properly evaluated only if the diagnostic method is based on bacteriological laboratory tests. Clinical data, particularly in the chronic stage of the disease, are unreliable in determining whether the infection has been eliminated from the udder tissue, since this disease is characterized by periods of remissions and exacerbations. Nothing less than the positive recognition of the elimination of the original infection can be used as valid criterion that the treatment has effected a cure. In all the cases reported in this study, the blood agar plate was used to diagnose the specific organism involved before and after treatment. All treated cases were tested two weeks after the last treatment and at monthly intervals thereafter. If the original infection was still present, or if a reinfection appeared with a different type organism, the course treatment which con-

TABLE 1—Summary of Treatments and Results with Furacin-Penicillin Mixture in Bovine Mastitis Caused by Streptococci, Staphylococci, Escherichia, and Pseudomonas

Herd	Courses of treatment received 1	2	3	Total Quarters treated (No.)	Quarters cured (No.)	Quarters not cured (No.)	Quarters cured (%)
Str. agalactiae infections							
A	14	6	4	24	21	3	87.5
B	30	7	1	39	38	1	97.4
Pathogenic staphylococcic infections							
A	14	11	4	33	29	4	87.8
B	26	5	–	32	31	1	97.0
Escherichia coli infections							
A	5	2	–	8	7	1	87.5
B	4	–	–	5	4	1	80.0
Pseudomonas infections							
A	4	2	–	6	6	0	100.0
B	5	2	1	8	7	1	87.5

sisted of three daily doses was repeated. The process of testing continued monthly. On the average, it was observed that a quarter which remained free from the original infection for one month or longer after the last treatment was considered as having been cured by the treatment.

This study was conducted on two herds, one of purebred Jerseys and the other of purebred and grade Guernseys. Milking machines were used on both farms.

The results of the treatment with furacin-penicillin combination are summarized in table 1. It will be noted that of the 63 quarters infected with *Str. agalactiae*, 59 (93.6%) responded to the treatment and 4 (6.4%) did not respond. Of the 65 quarters which were treated for pathogenic staphylococcic infection, 60 (92.3%) responded favorably to the treatment. This is significant since this type of udder infection is more refractory to treatment than are streptococcic infections. Although the number of cases infected with *E. coli* and *Ps. aeruginosa* is relatively small, the response to the treatment is more effective than that reported by other chemical agents.[12] Of the 13 cows infected with *E. coli*, 11 responded and 2 did not respond to the treatment. Even more significant is the result with *Ps. aeruginosa* in which 13 of 14 treated quarters responded favorably. Although infections with *E. coli* and *Ps. aeruginosa* are not common, when they occur the reaction is usually acute and the damage to the tissue is severe.

By the use of a regular herd-testing and treating method, it is possible to maintain a herd with low incidence of chronic infections as well as to eventually establish and maintain a herd free from *Str. agalactiae* infection with a minimum of loss of productive cows in a herd. The two herds in which these studies have been conducted are typical dairy herds with only average farm care and sanitary conditions. One herd maintains approximately 40 milking cows and the other herd 55 milking cows. The total incidence of clinical mastitis in both herds has decreased to almost the vanishing point as a result of systematic testing and treating with furacin-penicillin mixture; whereas, before the regular testing and treating method was introduced, the visits to the farm by the veterinarian for treating clinical cases were frequent and in many cases the damage to the udder was irreparable. Another significant factor to be pointed out as a result of the regular testing and treating program in these two herds is that, in addition to the decrease in clinical mastitis, there were increases in total milk production and a decrease in the monthly bacterial counts.

SUMMARY AND CONCLUSIONS

1) Furacin-penicillin mixture is an effective chemotherapeutic agent in the treatment of chronic and acute forms of bovine mastitis.

2) Furacin is nonirritating to the udder tissue and it is well tolerated in acute, inflammatory conditions. Futhermore, it does not interfere with the normal milk production during and after infusions.

3) Furacin possesses bacteriostatic and bactericidal properties against *Streptococcus agalactiae* and other streptococci of mastitis significance, pathogenic Staphylococci, *Escherichia coli*, and *Pseudomonas aeruginosa*. Its wide range of activity against gram-positive and gram-negative bacteria makes this chemical a valuable adjunct to our present small group of mastitis chemotherapeutic agents.

4) Adequate treatments with furacin-penicillin combination has reduced clinical mastitis to a minimum and, through a systematic program of testing and treating, *Str. agalactiae* may be eliminated from a herd.

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Treatment of Canine Coccidiosis (Isospora Bigemina) with Aureomycin

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Aureomycin has been found to possess anticoccidial activity against experimental avian coccidiosis (*E. tenella*)[1] and, on this basis, its use was suggested in the dog. This report covers the use of aureomycin in 25 dogs of various breeds, ranging from 6 weeks to 5 months of age, seen in a small animal hospital in Brooklyn, N.Y.

In 23 of the patients, diarrhea, sometimes with blood, was present. Two had been presented for health examinations. In some severe cases, dehydration was apparent. Other symptoms seen were anorexia, cough, and nasal discharge. In a few cases, there were slightly elevated temperatures. In 8 cases, the condition had been present for twenty to forty-seven days, and the remainder had shown symptoms for two to nineteen days.

DIAGNOSIS

The diagnosis of coccidiosis was made by demonstrating coccidial oöcysts in the feces by the DeRivas test,[2] an acid-ether technique for concentrating helminth ova. Five cubic centimeters of 5 per cent acetic acid solution is added to 1 Gm. of feces in a standard ⅝-in. centrifuge tube and shaken. This is strained through gauze and an equal quantity of ether added. This, in turn, is shaken and, following centrifugation for a few minutes, four distinct layers form—ethereal extract, detritus plug, acetic acid solution, and a small amount of sediment. The sediment is collected in a capillary pipette, placed on a slide, covered with a cover glass, and examined with a low power objective (100 x).

In examinations in the present series, a count of the oöcysts was made in each case examined. A method of classification was devised to facilitate record-keeping and for judging the effects of the drug throughout the treatment period. A 1+ classification was given if less than 10 oöcysts were found in each low-power field; 2+ for 10 to 20 oöcysts; 3+ for 20 to 30 oöcysts; and 4+ for more than 30 oöcysts. In this group of 25 dogs, 13 were classified as 1+; 5 as 2+; and 7 as 3+ at the start of treatment.

TREATMENT

In the majority of cases, aureomycin hydrochloride was administered orally in capsule form. As there were no specific dosage recommendations for the treatment of coccidiosis, various schedules were tried. The purpose was the complete elimination

TABLE I—Treatment of Canine Coccidiosis with Aureomycin—Continuous Treatment

Breed	Age (Mo.)	Wt. (lb.)	Duration (Days)	Orig. classification	Total daily dosage mg./lb. i.v.	oral	s/day	No. days	Results Days to Clin. imp.	Neg. fecs
Poodle	3	6	9	3+		17.0	2	9	2	9
Boxer	1½	10	6	2+		20.0	4	6		6
Wirehair	3	5	14	2+		20.0	2	5	2	5
Cocker	3	8	5	1+		25.0	4	5	2	5
Fox Ter.	3	6	7	1+		25.0	2	7	2	7
Wirehair	3	4	5	1+		25.0	2	5	2	5
Pomeranian	2	2	5	1+		50.0	2	5		5
Collie	2½	6	8	1+		80.0	2	5	2	5
Collie	4	12	7	2+		25.0	2	1		
						10.0	2	6	1	7
Collie	3	8	2	1+		40.0	2	1		
						12.5	2	1		2
Boston	2	3	4	1+		100.0	2	1		
						35.0	2	3	1	4
Boston	2	3	4	1+		100.0	2	1		
						35.0	2	3	1	4
Wirehair	2	4	43	2+		12.5	1	6		
						25.0	2	15	11	21
Cocker	3	5	12	3+		20.0	2	6		
						50.0	1	6	2	12
Manchester	3½	9½	19	3+		25.0	2	9		
						50.0	2	4	grad.	13
						50.0	2	8		8
Cocker	2	5	20	1+		40.0	2	12		
						100.0	2	6	3	19
Boston	5	6½	22	3+		40.0	2	7		
						80.0	2	12	5	22
Collie	3	8	20	2+	12.5		1	5		
						30.0	2	14	2	20
Fox Ter.	3	5	8	3+	20.0		1	2		
						10.0	2	6	1	8
Fox Ter.	3	5	8	3+	20.0		1	2		
						10.0	2	6	1	8
Fox Ter.	2	3	8	3+	35.0		1	2		
						15.0	2	6	2	8

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of oöcysts in the shortest possible time. However, critical experiments to determine minimum dosage for clinical response—*i.e.*, termination of diarrhea—were not conducted.

Aureomycin was administered orally to 21 dogs; in 4, the intravenous route was used initially, followed by oral dosage. Initial oral doses varied from 12.5 to 100 mg. per pound of body weight per day, followed by maintenance doses of 10 to 100 mg. per pound. Generally, the total daily dosage was divided and administered twice daily. Initial intravenous dosage varied from 12.5 to 35.0 mg. per pound once daily for two to five days, followed by oral dosage varying from 10 to 30 mg. per pound, administered twice daily for six to twenty days. Tables 1 and 2 give the details of treatment.

TABLE 2—Treatment of Canine Coccidiosis with Aureomycin—Interrupted Treatment

Breed	Duration Days	Total daily dosage (oral) mg./lb.	x/day	No. days	Orig. classification	Clinical course	Results Days to Clin. Imp.	Neg. feces
		12.5	2	4	1+	Remained 1+ throughout.		
Collie	36	Lapse		4				
3 mo.		12.5	2	16		In good condition. Cough persisted.		
8 lb.		Lapse		2				
		30.0	2	5			4	36
Collie	47	12.5	2	4	1+	for 8 consec. daily examinations. 3+ on 9th; treatment resumed 9-13; lapse 14-20. First neg. 16th day. Relapse 1+ on 20th day. Treatment resumed. Neg. 47th day.		
3 mo.		Lapse		4				
8 lb.		12.5	2	4				
		Lapse		7				
		30.0	2	28			4	47
Smooth Fox Ter.	20	80.0	2	9	1+	for 9 days. Lapse for 4 days at end of which symptoms were cough, purulent nasal discharge, diarrhea, anorexia. Treatment renewed, symptoms cleared rapidly. Neg. 20th day.		
3 mo.		Lapse		4				
6 lb.		50.0	3	7			3	20
Boston	25	80.0	2	2	1+	Clin. improvement 3 days. After 20 days treatment, ascarids found; N-butyl chloride adm. At 23 days, neg. for ascarids and coccidia. After 5 days without treatment, 4+ coccidia. Neg. 34th day.		
2 mo.		30.0	2	18				
3½ lb.		Lapse		5				
		70.0	2	9			3	34

Supportive treatment was administered when indicated. This consisted of the subcutaneous or intraperitoneal injection of 5 per cent dextrose in saline solution at the rate of 20 cc. per pound, to which parenamine* was added at the rate of 2 cc. per pound, to improve the nutritional state of the animal. Calcium was also administered in large doses according to need.

When Coccidia, together with hookworms or ascarids or both, were present, most satisfactory results were obtained by administration of an anthelmintic before aureomycin treatment was initiated. However, in 3 cases where hookworms and ascarids were isolated on routine fecal examinations during treatment with aureomycin, 2 cc. N-butyl chloride was administered following treatment with aureomycin with excellent results. In 1 case, ascarid ova were demonstrated in addition to Coccidia designated 3+. N-butyl chloride, 2 cc., was administered, followed by castor oil. On examination four days later, feces were negative for ascarids and the coccidial oöcyst count was reduced to 1+. At this time, aureomycin treatment was instituted.

Other treatments for coccidiosis had been administered previously in 5 cases. Two dogs received sulfamethazine, 1 gr. per pound of body weight orally for eleven days; in 1, there was clinical recovery with relapse or reinfection in ten days, and there was some clinical improvement in the other. Antidiarrheal remedies such as bismuth and paregoric, or kaolin preparations were without effect in 3 cases.

RESULTS AND DISCUSSION

All dogs in this series were treated until feces were negative for coccidial oöcysts. In all cases, the immediate effect was striking. Within forty-eight hours, there was abatement of clinical symptoms and diarrhea was controlled, thereby escaping the severe dehydration, lowered vitality, weight loss, depression, and weakness usually seen. Appetites quickly returned to normal. Coughing persisted in some animals but cleared following specific treatment. Regardless of the time under treatment and the dosage used, the animals remained physically well and growth was normal. In

*Sol. parenamine 15 per cent—100 cc. containing 15 Gm. of casein hydrolysate, consisting essentially of amino acids which are prepared by acid digestion and containing 0.05 per cent sodium bisulfite per 100 cc. solution. This product is manufactured by Winthrop-Stearns, Inc., New York, N. Y.

dogs badly dehydrated and in generally poor physical condition, secondary infections have frequently been a problem. In the cases reported, there were no complications and, in the majority of cases, supportive treatment was not necessary, presumably because of the bacteriostatic effect of aureomycin.

Tables 1 and 2 give the details of treatment of 25 dogs. It appeared desirable to determine what effect lapse in treatment would have on the outcome. Table 2 summarizes the clinical course of four dogs handled in this manner. In all cases, although these were originally light infections, treatment was necessary for twenty to forty-seven days. In 2 of these animals, very low dosage (12.5 mg./lb.) was administered initially. These results would indicate that continuous treatment at adequate dosage levels is necessary for best results.

There was great variation in the time necessary to completely eliminate oöcysts from the feces. It is difficult to correlate the degree of infection with dosage and time involved. There was a total of 13 dogs with infection classified as 1+. Eight of these, which had received 25 mg./lb./day, or more, required only two to seven days of treatment for a negative fecal examination. Five, however, were treated for periods ranging from sixteen to thirty-four days; these included dogs on both high and low dosage schedules and with lapses in treatment.

The incidence of canine coccidiosis is, in my opinion, greater than is generally recognized. Since the institution of routine fecal examinations of all suspicious cases in my practice, I have discovered a much higher frequency than expected. In 1,635 fecal examinations, there was a 24.8 per cent incidence of infection. Since becoming aware of coccidiosis as a definite problem, several drugs have been used in an effort to find a suitable treatment. Those most frequently used have been atabrine and azamine. While these drugs have been effective in eliminating coccidial oöcysts, they must be administered with care as intestinal irritation frequently occurs. The advantages of aureomycin treatment, principally the rapid control of diarrhea, the well-being of the dog, and the lack of toxicity of the drug, would indicate that aureomycin is the drug of choice in the treatment of canine coccidiosis.

SUMMARY

1) The use of aureomycin in the treatment of coccidiosis in 25 dogs is described. All dogs were treated until the feces were negative for coccidial oöcysts.

2) The administration of aureomycin controlled diarrhea within forty-eight hours. Clinical improvement was rapid, and there was no evidence of toxicity regardless of dosage administered.

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Careless Spread of Transmissible Disease—Is It Manslaughter?

It seems safe to conclude that, to date, most deaths from communicable disease have been accidental. It is interesting to conjecture whether many deaths from disease in the future may be classified as manslaughter. Such a transition has taken place with regard to motor traffic deaths. How much longer must we wait until people are held legally responsible for observing established procedures for protection from disease? Is the driver of a truck with defective brakes more culpable for a traffic death than a dairyman who does not protect his customers from undulant fever? It is logical to look forward to the time when school boards, teachers, and public officials will be held legally responsible for preventable disease cases in school and community, when negligence can be shown. —*W. W. Patty, Dean of School of Health and Physical Education, Indiana University.*

Fumagillin—New Amebicidal Antibiotic

A new crystalline antibiotic designated as H-3 with antiphage activity has been isolated from cultures of Aspergillus. The agent is capable of inhibiting *Staphylococcus aureus* 209 bacteriophage. Little antibacterial and antifungal activity was demonstrated and no antiviral activity, but activity against *Endamoeba histolytica* was indicated.—*Science, Feb. 23, 1951.*

Do Whipworms Occur in Domestic Cats in North America?

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WITHIN THE past decade, there have been at least three reports (*vide infra*) of whipworms occurring in domestic cats in the United States. The diagnoses, however, were all made from the observation of eggs in fecal examinations rather than by finding the worms. On this account, one may rightfully reserve judgment on their accuracy, particularly in view of the infrequent occurrence of whipworms in any of the Felidae. Moreover, the eggs of Capillaria spp., closely related worms which occur more commonly in these hosts, are sufficiently similar to those of the whipworm to suggest the possibility of diagnostic error in routine fecal examination.

Two species of Trichuris, namely, *Trichuris serratus* and *Trichuris campanula*, were described from the domestic cat in Brazil by von Linstow in 1879 and 1889, respectively. In 1923, however, Urioste examined some specimens from the domestic cat in that country and concluded that *T. serratus* was the only valid species. Nevertheless, there are some rather marked differences in the measurements given by von Linstow for the two species, and the synonomy proposed by Urioste has not been universally accepted. Indeed, Pinto and Lins de Almeida, in a synopsis of the helminth parasites of domestic animals in Brazil in 1937, made no reference to *T. serratus* and indicated that *T. campanula* was only rarely encountered. In 1934, Arenas *et al.* collected specimens of *T. serratus* from a domestic cat in Cuba and, six years later, Vogelsang reported that *T. campanula* is encountered in this host, though rarely, in Venezuela. In so far as could be determined, these are the only reports of Trichuris infections in domestic cats in which it was stated or implied that specimens were found, and it is particularly noteworthy that none has come from North America. It should be noted, however, that in 1921 Galli-Valerio listed *T. serratus* from the domestic cat in Switzerland, although the method of diagnosis was not indicated. In other Felidae, Trichuris has been reported from the ocelot, maracay, and lion.

Erhardt[2] found *T. serratus* eggs in fecal examinations of 12 of 115 house cats in East Prussia; and later, he[3] observed the eggs of this parasite in the feces of 9 cats. In the latter instance, the animals were used in anthelmintic trials with a product designated 430 Kl; and it is particularly noteworthy that all dosages were 100 per cent effective. The efficacy of the treatment, however, was apparently based solely upon egg counts. Since there was no indication that specimens of *T. serratus* were seen at any time, the efficacy of the treatment and, indeed, the occurrence of the parasites in these animals can not be accepted without reservation.

Koutz and Rebrassier[3] reported that *T. campanula* eggs were found in 2 (2.41%) of 83 fecal samples examined from cats at the Ohio State Veterinary Clinic during the 1940-1941 school year; and two years later, Koutz[4] noted that in 1942 the incidence of this parasite at the same institution was 7.81 per cent. Moreover, in a personal communication in June, 1950, Koutz stated that 1 or 2 cases are found in the Ohio State Clinic each year.

The most recent report of these parasites in domestic cats in the United States was published by Burch and Blair[1] in May, 1950. These investigators found whipworm eggs in the feces of 5 of 64 cats that were used in anthelmintic trials. The eggs were found in fecal examinations that were made before the animals were treated, but there was no indication that similar examinations were made immediately before autopsy. Although whipworms were not recovered from the feces after treatment, it was concluded that the anthelmintic was completely effective against these parasites because none were found at autopsy. Presumably, the diagnosis of whipworm infection was occasioned by the misidentification of capillarid eggs, and, moreover, these probably would have been found if fecal examinations had been made when the animals were autopsied. It may be added that the writer has observed eggs of the type under discussion in fecal examination of cats obtained in the vicinity of Beltsville, Md. In no instance, however, have whipworms been recoverd from these animals; but *Capillaria aerophila, Capillaria felis-cati*, or both, have invariably been found at autopsy.

Because all the reports of whipworms in domestic cats in the United States have been based solely upon the observation of eggs in fecal examinations, the writer examined the records of the Helminthological Collection of the U. S. National Museum in an attempt to obtain specimens for study. Curiously, however, there were no specimens or records of this parasite in the entire Collection. On this account, an inquiry was sent to the veterinary colleges

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in Alabama (A.P.I. and Tuskegee), California, Colorado, Georgia, Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, New York, Ohio, Oklahoma, Pennsylvania, Texas, and Washington, and to the Ontario Veterinary College and Macdonald College, P.Q., Canada. The replies were essentially the same in every instance; namely, that there was no record that the parasite had been found in the locality and that there were no specimens in their respective helminth collections. A similar inquiry was sent to Burch and Blair at New Augusta, Ind., but this, too, proved fruitless since they reported that no whipworms from cats had been saved. It is especially interesting, however, that in the replies from Michigan and Ontario, it was stated that whipworm eggs had been found in fecal examinations at those institutions. Since these inquiries constitute a fairly representative survey of the North American continent, the findings

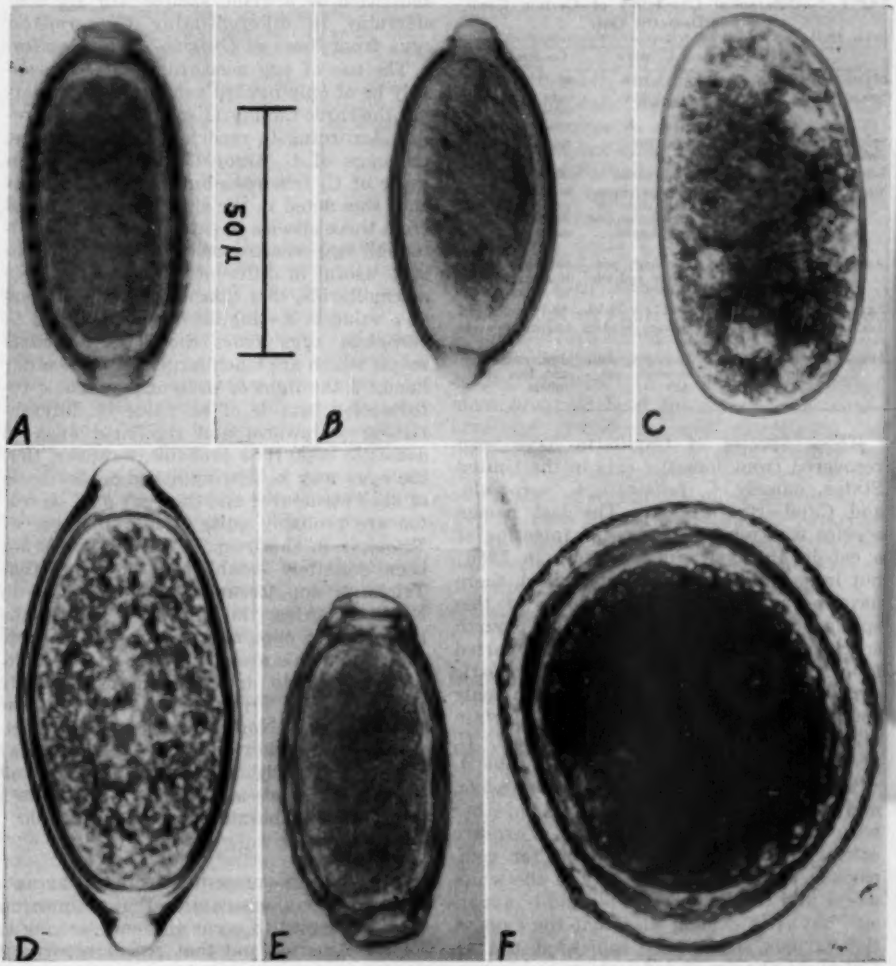

Fig. 1—Eggs of some nematode parasites in cats and dogs. (A) Capillaria felis-cati; (B) Capillaria aerophila; (C) Ancylostoma caninum; (D) Trichuris vulpis; (E) Capillaria plica; and (F) Toxocara cati. All eggs were photographed at the same magnification.

suggest rather conclusively that Trichuris infections in domestic cats in this area are extremely uncommon, if indeed, they occur at all. The evidence indicates, rather, that the reports of these parasites probably were based upon the misidentification of capillarid eggs. Moreover, it appears that the status of Trichuris infections in domestic cats requires further study, particularly in regard to the number of species which occur in this host.

TABLE I—Differential Characters of Certain Capillaria in Domestic Cats

	C. felis-cati	C. plica	C. aerophila
Male	25.5 mm.	13-15 mm.	15-25 mm.
Spicule	2.5 mm.	4 mm.	very thin, usually not visible
Spicule sheath	aspinous	aspinous	spinous
Female	28-32 mm.	30-36 mm.	20-40 mm.
Vulva	labia slightly salient; some distance from termination of esophagus	tubular appendage; close to termination of esophagus	without appendage; at termination of esophagus
Anus	terminal; surrounded by 3 slight lobes	terminal; posterior end obtuse	subterminal; not surrounded by lobes
Eggs	51-65μ x 24-32μ	60-62μ x 29-30μ	58-79μ x 29-40μ
Location	urinary bladder	urinary bladder	trachea, bronchi
Hosts	domestic cat, wild cat	dog, fox, wolf, domestic cat (?)	dog, domestic cat, fox, wolf, others

Three species of Capillaria have been recovered from domestic cats in the United States, namely, *C. felis-cati*, *C. aerophila*, and *Capillaria linearis*. The last named species was reported from the intestine of a cat in Pennsylvania by Leidy in 1856; but in so far as could be determined, there have been no subsequent reports of this species from North America. A fourth species, *Capillaria plica*, has been reported from the urinary bladder of the domestic cat, but this species is more commonly found in the dog, fox, and wolf. Certain differential features of *C. felis-cati*, *C. aerophila*, and *C. plica* are given in table 1.

The eggs of *C. felis-cati*, *C. aerophila*, and *C. plica* are shown in figure 1 together with those of *Trichuris vulpis*, *Toxocara cati*, and *Ancylostoma caninum* for comparison. The gross similarity of the whipworm and capillarid eggs is readily apparent, but it is evident also that the eggs of the various species are somewhat characteristic. The capillarids which occur most commonly in domestic cats in North America are *C. felis-cati* and *C. aerophila*, and the eggs of these species are quite easily distinguished by differences in the shell structure and in the conformation of the opercula. *C. plica* has also been reported from the domestic cat in a few instances, but the diagnosis may have been occasioned by a misidentification of *C. felis-cati*. The eggs of *C. plica* and *C. aerophila*, species which occur most commonly in dogs, may be distinguished also by similar differences in structure. In either host, the examination of a urine sample will aid considerably in differentiating *C. aerophila* eggs from those of *C. felis-cati* or *C. plica*.

The use of egg measurements will probably be of only limited value in differentiating the three Capillaria spp. discussed herein. According to reports in the literature, the eggs of *C. aerophila* are larger than those of *C. felis-cati*, but very little difference was noted in the size of eggs obtained from these species in cats at Beltsville. Although egg measurements are not particularly useful in differentiating these species of capillarids, this character is of considerable value in distinguishing *C. plica* and *C. aerophila* eggs from those of *Trichuris vulpis* which are much larger. On the other hand, in the light of presently available information, size is of no value in differentiating whipworm and capillarid eggs in domestic cats. It is probable, however, that the eggs may be distinguished on the basis of shell structure; and the eggs of *T. serratus* are probably quite similar to those of *T. vulpis* in this respect. Since it has not been definitely established, however, that Trichuris spp. occur in domestic cats in North America, the differentiation of the two types of eggs may be of only academic interest in this area. It would be desirable, nevertheless, to determine more definitely the status of Trichuris infections in domestic cats in North America; and veterinarians and other interested persons may assist materially in this regard by collecting specimens and submitting them to a parasitology laboratory for identification.

SUMMARY

Evidence is presented which warrants thé provisional assumption that whipworms are not known to occur in domestic cats in North America and that recent reports of their occurrence probably have been occasioned by the misidentification of capillarid

eggs. Diagnostic information, including photomicrographs of the eggs of these capillarids, is given to assist in their identification.

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[5]Koutz, F. R., and Rebrassier, R. E.: The Incidence of Parasitic Infection in Domestic Animals. J.A.V.M.A., *100*, (1942):214-216.

Caked Udders

Experience opposes the instruction of teachers to dairymen that a cow milking 2 to 2½ gallons per day should be dried up summarily by skipping a milking or by stopping the milking completely in order that the cow may have a rest of thirty to sixty days. My advice has always been to continue milking heavy milkers. On the other hand, for the heifers and cows which have severe swelling of the udder, including dropsical swelling on the ventral surface of the abdomen, I advocate milking before the cow freshens. When cows and heifers are milked morning and evening, they may give as much as 2 to 3 gallons of milk on the day of calving. Usually no other treatment is necessary.—*L. E. Thompson, D.V.M., Oklahoma.*

Cats and Newcastle Disease Virus

Cats may become infected with Newcastle disease virus, according to Dr. H. E. Moses and other veterinary researchers of Purdue University, Lafayette, Ind.

First, there were outbreaks of Newcastle disease in broiler-producing areas of Indiana. Two of 9 cats known to have eaten some of the dead birds developed high concentrations of antibodies for the Newcastle disease virus. Another test with 2 cats disclosed that, while they didn't seem to possess antibodies that would resist Newcastle virus, they had a high native resistance to that disease. At least injections of large amounts of the virus failed to produce any symptoms of the disease.

Investigations on Internal Parasites of Dogs

This is an excellent report of investigations on internal parasites of dogs in Denmark. Published in 1949, it is in the English language (73 pages) and many good photographs and other illustrations and numerous references to the literature of the entire world pertaining to this subject are included.

If obtainable, this publication should be of much interest and value to all veterinarians who engage in canine practice.—*N. O. Christensen and Hans Roth: Investigations on Internal Parasites of Dogs. Royal Veterinary and Agricultural College, Copenhagen, Yearbook, 1949.*

Effect of Cortisone on Sarcoidosis

Cortisone was administered to 10 human patients with sarcoidosis. The duration of medication in this group ranged from one to four months. In all patients, improvement occurred both subjectively, as measured by symptoms, and objectively, as measured by roentgenographic change in the lungs and clearing of eye lesions. However, upon discontinuation of the medication, in most instances the disease reverted to pre-treatment status, although subjective improvement remained in some.—*Forty-Seventh Annual Meeting, Nat. Tuberc. A., May 14-18, 1951.*

Marrow Biopsy in Sheep

Sternal puncture at the iliac crest is a simple and effective technique for collecting bone marrow in sheep. The sheep are restrained in a sitting position, the third rib is followed down to its articulation with the sternum, the wool is clipped over this area, the skin cleaned; the skin, subcutaneous tissue, and periosteum are then infiltrated with 1 to 1.5 ml. of 2 per cent procaine solution. A sterile and dry Salah needle and syringe are washed with 3.8 per cent sodium citrate solution and the needle is inserted at the point indicated for aspiration of marrow.—*Brit. Vet. J., Jan., 1951.*

Tests with Repellents Against the Stable Fly

B. V. TRAVIS, Ph.D., and A. L. SMITH

Washington, D. C.

AS A PART of a study by the Bureau of Entomology on the use of repellents to protect man against biting insects, a number of materials were tested against the stable fly, *Stomoxys calcitrans* (L.), in Florida. Field tests with a few of the more promising mosquito repellents were made near Apalachicola in 1942. From 1942 to 1945, the same materials, together with a number that were being screened routinely against mosquitoes, were tested at the Orlando (Fla.) laboratory. The results of these tests are given in this paper.

Methods.—The repellents were applied at the rate of ¼ teaspoonful to the arms (elbow to wrist) and ⅜ teaspoonful to the legs (knee to ankle), and the time, in minutes, before the first bite was recorded as the repellent time.

Field Tests. — Two series of field tests were conducted in October, 1942, at Apalachicola, Fla., where an unusually large population of stable flies was annoying both man and livestock. Occasionally, the time to each of three bites was recorded, the material being redistributed on the arm or leg after each bite. The biting rate on an untreated leg of a research subject during the first series was 1 to 4 per minute and during the second series, it was 38 to 94 per half minute. Because of the low biting rate during the first series of tests, most of the tests were terminated before bites were received, and only the results of the second series are given in table 1. The repellent time was much shorter when the biting rate was high.

Of the standard repellents (repellent 6-12,* indalone,** and dimethyl phthalate), indalone was the most effective. The pinene ether of glycol was also effective, but caused considerable skin irritation. The 89 per cent fraction was superior to the undistilled compound. The addition of pyrethrins did not extend the repellent time. The repellent time for indalone in alcohol was unusually long.

When the materials were redistributed after each bite, the repellent time usually decreased from one bite to the next (table 2). However, sufficient material remained after the second bite to provide considerable protection.

Laboratory Tests. — At the Orlando laboratory, the arms of research subjects were treated with repellents and exposed in wire-screen cages 30 in. on each side. About 2,000 raised flies were maintained in each cage, freshly emerged flies being added daily to provide populations of various ages. The flies were supplied with water and a mixture of water and honey.

TABLE 1—Effectiveness of Various Repellents Against Stomoxys Calcitrans—Field Tests

Repellent	Tests (No.)	Average repellent time (min.)
Acetamide, alpha-butoxy-N-cyclohexyl-	6	86+
Ethanol, 2-(2-butoxyethoxy)-, acetate	10	74
Glycol, pinene ether* (pinene ether of glycol):		
Undistilled	7	116
89% fraction (b. p. 137 C. at 26-27 mm.)	6	144
Plus pyrethrins 1%	5	112
1,3-Hexanediol, 2-ethyl-(Repellent 6-12)	10	46
Repellent 6-12 in ethanol:		
50%	6	11
25%	6	8
10%	7	3
Oil of citronella	9	54
Phthalic acid, dimethyl ester (dimethyl phthalate)	9	38
1,2H-Pyran-6-carboxylic acid, 3,4-dihydro-2,2-dimethyl-4-oxo-, butyl ester (indalone)	15	192+
Indalone in ethanol:		
50%	6	68+
25%	5	120+
10%	6	28

*Indicates that this is the best name available for this material.

The arms were exposed for three minutes immediately after treatment. If no bites were received, they were exposed again in about fifteen minutes and at approximately thirty-minute intervals thereafter until a bite was received. The biting rates on untreated arms were 10 to 20 per half minute.

The materials that were effective for sixty minutes or more are given in table 3. As in the field tests, indalone was superior to dimethyl phthalate and repellent 6-12, while *p*-methoxyace-

TABLE 2—Effectiveness Against Stomoxys Calcitrans of Repellents when Redistributed on the Arm or Leg After Each Bite—Field Tests

Repellent	Tests (No.)	Ave. time (min.) to 1st bite	2nd bite	3rd bite
Ethanol, 2-(2-butoxyethoxy)-, acetate	10	74	20	13
Glycol, pinene ether	7	116	30	22
Repellent 6-12	10	46	59	24
Phthalic acid, dimethyl ester	9	38	37	7
Indalone	8	202	53	25

This work was conducted under a transfer of funds, recommended by the Committee on Medical Research, from the Office of Scientific Research and Development to the Bureau of Entomology and Plant Quarantine.

From the USDA, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine, Washington, D. C. Dr. Travis is now at Cornell University, Ithaca, N. Y.

*Manufactured by Carbide & Chemicals Corp.

**Manufactured by U. S. Industrial Chemicals, Inc.

tophenone and 2-phenylcyclohexanol appeared to be about as effective as indalone.

The following materials were effective for fifteen minutes, but not for one hour:

Abietic acid, methyl ester
Abietic acid, methyl ester, hydrogenated
Acetic acid, hexadecyl ester
Acetic acid, phenyl-, ethyl ester, 50% in phthalic acid, dibutyl ester
Acetophenone, p-methyl-, 50% in phthalic acid, dibutyl ester
Anisaldehyde, 50% in phthalic acid, dibutyl ester
Anisic acid, ethyl ester, 50% in phthalic acid, dibutyl ester
Biphenyl, amyl-
Meso-2,3-Butanediol
Cyclohexanol, 3,3,5-trimethyl-
Dodecanediol, monoacetate
Dodecyl alcohol
Ethanol, 2-(p-tert-amylanilino)-
Ethanol, 2-{2-(3,3,5-trimethylcyclohexoxy)ethoxy}-
Ether, amyl phenyl, 50% in phthalic acid, dibutyl ester
Ether, amyl xylyl
Ether, butyl phenyl
Eugenol, 50% in phthalic acid, dibutyl ester
Furoic acid, butyl ester, 50% in phthalic acid, dibutyl ester
Glycol, polyethylene, alkyl aryl ether
1,3-Hexanediol, 2-ethyl-, 75% and 25% in ethanol
Hydrocinnamaldehyde
Lactic acid, butyl ester
Lactic acid, 2-ethoxyethyl ester
Lactic acid, 2-ethylbutyl ester
Lactic acid, isopropyl ester
Lauric acid, 2-ethoxyethyl ester
Myristic acid, isopropyl ester, mixture with isopropyl laurate and palmitate
Oleic acid, 2-hydroxyethyl ester
Olein, mono-
Oil, lavender (imitation), mixture of linalyl esters and essential oil terpenes
Oil, lemon-grass
Phenetole, beta-chloro-
Phthalic acid, dimethyl ester
Propiophenone, 50% in phthalic acid, dibutyl ester
Valeric acid, alpha, gamma-dioxo-, ethyl ester
Commercial perfuming agents (substitutes for essential oils):
Annol-M.M. & R.
Cam-o-sass
Citronella replacement
Kamm-o-M.M. & R.
Or-o-tyme

The following materials were ineffective immediately after they were applied:

Anisole, 4-tert-amyl-2-chloro-
Benzene, didodecyl-
Benzene, tetramyl-
Benzene, triamyl-
Bicyclo[2.2.1]-5-heptene-2,3-dicarboximide, N-amyl-, mixed isomers
Butyl phosphate, tri-, 50% in phthalic acid, dibutyl ester
Butyric acid, 2-ethyl-, diester with triethylene glycol
o-Cresol, 3,5-dinitro-, 50% in phthalic acid, dibutyl ester
Cyclohexanol, 2,4-diamyl-
Diethylene glycol, diacetate
Ethanol, (p-tert-amylphenoxy)-
Ethanol, (x,y-di-tert-amylphenoxy)-
Ethanol, 2-[2-(2-methoxyethoxy)ethoxy]-, acetate
Ether, amyl benzyl
Ether, bis[2-(2-methoxyethoxy)ethyl]
Glycol, polymerized, dilaurate
Hexaethylene glycol
Lauric acid, amyl ester
Lauric acid, 2-(p-tert-amylphenoxy)ethyl ester
Lauric acid, monoester with propanediol
Maleic acid, diamyl ester
Malonic acid, dibenzyl-, diethyl ester
Mannitol, triricinoleate
Naphthalene, polyamyl-
Oleic acid, amyl ester
Oleic acid, 2-(2-hydroxyethoxy)ethyl ester
Phthalic acid, bis[2-(2-ethoxyethoxy)ethyl] ester
Phthalic acid, diethyl ester
Ricinoleic acid, acetyl-, butyl ester
Ricinoleic acid, 2-(2-ethoxyethoxy)ethyl ester
Ricinolein, mono-
Sebacic acid, bis (2-ethoxyethyl) ester
Sebacic acid, dibutyl ester
Sorbitol, dioleate
Sorbitol, laurate
Toluene, amyl-, 50% in phthalic acid, dibutyl ester
Toluenesulfonamide, N,N-dibutyl-
Triethylene glycol
Triisopropanolamine
A commercial plasticizer

A few paired tests were made, in which a different material was placed on each arm of the test subject. Such a procedure equalized the differences between test subjects and the dates of treatment. In these tests (table 4), indalone was superior to isopropyl cinnamate but inferior to 2-phenylcyclohexanol. The 1-1-1 mixture was equal to indalone alone, and much better than either of the other constituents alone.

In addition to tests with technical materials alone, other tests were made in which various thickeners were added to a few repellents in an effort to extend the protection time. Several repellents mixed with

TABLE 3—Duration of Effectiveness Against Stomoxys Calcitrans of Repellents Giving Protection for Sixty or More Minutes—Laboratory Tests

Repellent	Tests (No.)	Average repellent time (min.)
Acetophenone, p-ethoxy-	4	170
Acetophenone, p-methoxy-(p methoxyacetophenone)	8	196
Benzaldehyde, o-ethoxy-	2	106
Caproaldehyde, alpha-ethyl-beta-hydroxy- + benzyl benzoate	4	177
Cinnamic acid, isopropyl ester (isopropyl cinnamate)	4	189
Cinnamyl alcohol	2	110
Cinnamyl alcohol, 30% in phthalic acid, dibutyl ester	4	75
Cyclohexanol, 2-phenyl- (2-phenylcyclohexanol)	4	322+
Ethanol, 2-(2-butoxyethoxy)-, acetate	4	106
Ethanol, 2-(p-tert-butylphenoxy)-	3	73
Ethanol, 2-(N-ethylanilino)-	7	127
Repellent 6-12:		
Undiluted	17	101
50% in ethanol	2	77
Ketone, amyl phenyl	4	91
Ketone, 2-hydroxy-1-methylamyl methyl, + benzyl benzoate	4	106
Lactic acid, butyl ester, acetate	1	96
Lactic acid, 2-ethylhexyl ester	4	97
Malonic acid, bromo-, diethyl ester	3	60
Mandelic acid, ethyl ester	1	181
Naphthalene, 1-chloro-	2	95
Indalone:		
Alone		
25% in ethanol	29	246+
Plus dimethyl phthalate and Repellent 6-12 (1-1-1 mixture)	5	120
	13	154
o-Toluidine, 4-bromo-	4	101

butyl phthalate, as well as commercial products, were also tested. Neither 2 or 4 per cent of ethyl cellulose nor 10 per cent of stearic acid or a synthetic gum added to

TABLE 4—Results of Paired Laboratory Tests with Several Repellents Against Stomoxys Calcitrans—Three to Five Tests with Each Repellent

Pair	Repellent	Average repellent time (min.)
1	1-1-1 mixture[1]	134
	Indalone	134
2	1-1-1 mixture	197
	Dimethyl phthalate	28
3	1-1-1 mixture	121
	Repellent 6-12	46
4	2-Phenylcyclohexanol	344
	Indalone	261
5	Isopropyl cinnamate	189
	Indalone	331

[1]Equal parts of indalone, dimethyl phthalate, and repellent 6-12.

repellent 6-12 or dimethyl phthalate extended their repellent time. Likewise, 50 per cent of methyl cinnamate added to dimethyl phthalate caused no increased repellent time. The addition of 30 per cent of calcium stearate to the 1-1-1 mixture reduced the repellent time.

Several commercial companies provided pastes and grease-base creams for these tests. Those containing indalone, dimethyl phthalate, or repellent 6-12 were not so effective as the undiluted materials. The repellent time of mixtures of dimethyl phthalate and either indalone or repellent 6-12 was slightly longer than that obtained with these repellents undiluted. Likewise, the addition of an aromatic substance similar to oil of citronella to repellent 6-12 caused some increase in repellent time. Creams containing pyrethrum, a mixture of pyrethrum and oil of citronella, phenolized camphor, and some aromatic compounds similar to oil of citronella were ineffective.

DISCUSSION

The repellent times of all materials against *S. calcitrans* were longer in the laboratory tests than in the field, although their relative effectiveness was essentially the same. The great range in repellent time was similar to that experienced with other species of biting insects. It was due in part to differences among the test subjects, but also to the erratic biting habit of the flies. The better materials at times repelled flies for only a few minutes, and the poor materials frequently provided protection for several hours. Both in the field and in the laboratory, the flies varied so greatly in their aggressiveness that records were of no value when the biting rates were low.

SUMMARY

In laboratory and field tests with a number of repellents against the stable fly, *Stomoxys calcitrans* (L.), indalone, 2-phenylcyclohexanol, *p*-methoxyacetophenone, and the pinene ether of glycol showed outstanding effectiveness. Dimethyl phthalate, repellent 6-12, and oil of citronella were relatively ineffective. The addition of thickeners to repellent 6-12 or dimethyl phthalate did not extend the repellent time. When the flies were aggressive, the repellent time was shorter.

Parturient Paresis

In 7 cases of milk fever studied, plasma phosphorus levels increased following udder inflation, but in no case could the phosphorus level be considered within the normal range when the cows got up. However, recovery was noted when the calcium level was near or above 6 mg. per 100 cc. of serum. Meantime, blood serum magnesium levels remained in normal to high normal range.

It is suggested that the relationship between the serum calcium and serum magnesium may be highly important in the symptomatology of milk fever. Considerable difference occurs between cows as to the blood levels of calcium, phosphorus, and magnesium at the time of recovery from milk fever. This suggests that possibly the relative levels of calcium, magnesium, and phosphorus are more important in the symptomatology than the actual blood level of any one constituent.—*R. P. Niedermeier and V. R: Smith, J. Dai. Sci., Jan., 1950.*

A Danger of the Newer Antibiotics

The Council on Pharmacy and Chemistry of the American Medical Association is now requiring a warning statement to be added to the label of bottles of aureomycin, chloramphenicol, and terramycin, pointing out that when susceptible bacteria are suppressed by these drugs, *Monilia* (*Candida*) and other yeastlike organisms may appear. —*J. Am. M. A., 145 (1951).*

NUTRITION

Ration for Bulls

Large-scale artificial breeding programs have resulted in increased attention to the feeding of bulls. Inclusion of grain in the ration for bulls generally has been accepted as necessary. There is little experimental evidence either to support or refute this practice. An investigation into the possibility of feeding an all-roughage ration is reported. It is generally believed that too much silage results in "excess middle," with a falling off of libido in bulls.

Regardless of the two rations fed for twelve months to 20 dairy bulls, the initial motility, density, and volume of ejaculates, as well as the longevity of the spermatazoa in storage, were similar. The condition and health of the bulls was maintained on the all-roughage ration. Contrary to general beliefs, measurements of the paunch girth of the bulls indicated that an all-roughage ration could be fed with silage at a level three times higher than that normally recommended without the development of "excessive middle."

On the basis of fertility, it appears that the two rations were equally efficient in maintaining the reproduction ability of bulls. The cost of feed is an important factor to the all-over cost of maintaining large bull studs. An all-roughage ration is cheaper.—*J. Dai. Sci., Dec., 1950:870-878.*

Turkey Rations May Be 60 Per Cent Corn

Turkey growers can use a 16.6 per cent protein all-mash ration containing up to 60 per cent corn, even during warm weather. This information was determined by Roy E. Roberts, Purdue University poultry nutritionist.

To start his test, Broad-Breasted Bronze poults were fed a 25 per cent protein diet for eight weeks. The poults then were divided into two lots.

One lot continued to receive the 25 per cent protein starting ration to the age of 12 weeks; it then was fed a 16.6 per cent protein, all-mash growing ration to 28 weeks of age. Corn was added to the diet at the age of 22 weeks.

The other lot was fed a 20 per cent protein mash with corn and oats free choice from the age of 8 to 28 weeks.

At 28 weeks, both lots were individually weighed. The male and female turkeys were 0.28 and 0.14 pounds heavier, respectively, on the 16.6 per cent protein all-mash ration than for the 20 per cent protein mash ration. Difference in the amount of feed required per pound of gain was not considered great enough to be significant. —*Purdue University, Lafayette, Ind.*

Drugs in Mixed Feeds

It is admitted that no legal, medical, or technological outmoded philosophy should defeat progress or even delay it. A discovery of real economic value has been made recently. This consists of a food, B_{12}, and a drug, aureomycin. When used in very small quantities in feeds for swine, turkeys, and chickens, more rapid gains, apparently better feed utilization, and shorter fattening periods result. It is particularly advantageous to an all-plant ration such as corn and soybean meal, and this gives evidence that it might at least partially be able to replace the expensive animal protein feeds such as meat scrap, fish meal, and dairy products.

The full significance of the finding has not yet been ascertained. It may be extended to calf feeding. In the early life of this species, before rumen function develops, very serious losses have long occurred from the gastrointestinal disturbance known as white scours, the survivors from which are still subject to further mortality from calf pneumonia weeks or a few months later in life. On account of seriously affecting the essential normal bacterial fermentation in the rumen of the older four-stomach species, it apparently has no place in the feeding of ruminants past the milk-drinking stage. The sulfonamides are another pertinent example, particularly sulfaquinoxaline to control coccidiosis in poultry feed.

Rarely has any discovery moved in so

short a time from the experimental stage to such widespread practical application. Rather my object is to point out possible pitfalls which may be ahead from the almost national headlong way in which the feed industry has taken to mixing feed and drugs.—*From an address, "Nutrition in Relation to Disease," by George H. Hart, D.V.M., Dean, School of Veterinary Medicine, University of California, Davis, at the 43rd Annual Convention of the American Feed Manufacturers Association, Chicago, May 10-11, 1951.)*

Vitamin A Studies with Beef Cattle

When mature beef cows obtain green feed during the early summer months, they are not likely to suffer from a vitamin A deficiency during the remainder of the year is the conclusion reached by Klosterman, Bolin, and Ford (*North Dakota Agric. Exp. Sta. Bull.*, Jan.-Feb., 1951.) In other words, beef cattle maintained under practical farm conditions are not likely to develop a vitamin A deficiency.

Nutrition for the Dog and Cat

It is estimated there are 20 million dogs and 23 million cats in the United States. They consume between 6 and 7 million tons of feed annually, the chief sources of which include canned food, dry food, horse meat, and table scraps.

In 1950, 1,725,000,000 cans of dog and cat food were used. Also in 1950, 500 thousand tons of dry dog food was used and an unknown amount fed to cats.

In too many instances these dry foods lack nutritive essentials; the general quality is often in inverse proportions to the intensity of advertised claims, and the condition of pet animals dependent on them for food is deplorable.

The biscuit type requires high heat treatment to dry the interior thoroughly and this reduces nutritive value even though originally present. A variety of deficiency diseases result if they become the main part of the diet. Many small animal practitioners become expert on deficiency diseases of pet animals. They are dispensing vitamin tablets in quantity to offset the deficiencies of our modern commercial products with which these animals are so universally fed.

The business needs to be brought up to a higher plane by more responsible people taking hold rather than dependence being placed alone on feed control regulations.—*From an address, "Nutrition in Relation to Disease," by George H. Hart, D.V.M., Dean, School of Veterinary Medicine, University of California, Davis, Calif., presented at the Annual Convention of the American Feed Manufacturers Association, Chicago, May 10-11, 1951.*

Feeding of Thyroprotein to Swine

Feeding of thyroprotein to swine in drylots can speed the rate of growth without requiring more feed per unit of gain.

This was determined in seven feeding trials in which small and varying amounts of thyroprotein were incorporated in the rations of growing and fattening hogs which were kept on concrete floors, legume pastures, and barren soil lots.

Swine which received thyroprotein in their ration and which were fed on concrete or barren soil lots gained from 10 to 41 lb. more than similarly fed animals which received no thyroprotein in their ration during the feedlot period. In these cases, the thyroprotein-fed pigs required no more feed per unit of gain than the control animals and, in two instances, they required substantially less feed per unit gain than the controls.

The feeding of thyroprotein to growing and fattening hogs on legume pasture, however, resulted in no increased gain, but rather caused a decrease in the rate of gain of animals consuming it. Thyroprotein, therefore, may be harmful to the growth of hogs which are consuming legume forage.—*Purdue University, Lafayette, Ind.*

The feeding of proteins of high biologic value is important in stimulating the production of immunity in ailing puppies. Proteins of such high biologic value are whole cooked egg, lactalbumen, casein, and horse meat. The degrees of value are 98, 90, 70, and 70, respectively. These proteins are important because the antibodies are globulin in nature, and they can be synthesized in the body only when an adequate amount of protein of high quality is available in the diet.—*M. L. Morris, D V.M., New Jersey.*

EDITORIAL

Straws in the Wind

The Stone Age, with its crude implements, the Iron Age, with its brittle metal castings, and the steel, aluminum, and a variety of other ages leading to the Atomic Age have revolutionized civilization and passed on.

Similarly, various phases of veterinary medicine have come and gone. The "horse doctor" is dead, but some people, even some veterinarians, haven't read the death notice yet.

Change is the only predictable thing in our universe. Both men and their works, all living things, must constantly adapt themselves to the new order. Things either progress or retrogress. They never stay put.

Vital changes are going on in veterinary medicine, and we can either stand by and watch the show or play a part in these changes. It is desirable to be a part of the answer, rather than a part of the problem.

Some of the "straws in the wind" which are being debated are:

1) The bad practice of a few veterinarians, as well as a few other professional men, of being too fee-conscious in relation to the welfare of the client and his animals, and not telling the client what he should know about the particular disease being treated, is generally out-moded in our profession. Education of people is the essence of progress. Collectively, our profession is spending much effort and many thousands of dollars every year in "client" education. Perhaps we now need an AVMA periodical, similar to *Today's Health* published by the American Medical Association, for the purpose of educating the layman about the veterinary profession and the health of animals.

2) Should veterinarians try to perform *all* veterinary techniques and services? Or are we heading into a period when the veterinarian, like the modern physician, must rely on lesser trained individuals such as technicians and nurses to perform some of the routine services? Even now this situation is in a state of change and controversy. Here are a few of the more pertinent of the questions. Space will not permit discussion of all the pros and cons.

a) Should the veterinarian be the *only* one to perform artificial insemination in cattle? A few years ago, at least one large dairy state had a law requiring that only veterinarians perform this technique in "artificial insemination rings." This didn't work. The practicing veterinarians in that state were prime movers in requesting a change in that law. Only a small part of this work throughout the nation is now being done by veterinarians.

b) Should laymen, trained and supervised by veterinarians, be permitted to *collect* blood samples from cattle and swine for brucellosis testing for interstate shipment, control, and eradication? They are doing it in a number of states. Is this right and economically sound? Will it get results? The same applies to calf vaccination for brucellosis. Powerful portions of the farm press are advocating wider adoption of this practice. Vaccination of farm animals for foot-and-mouth disease in Mexico has been done by crews of trained laymen under the supervision of veterinarians. Apparently, not enough veterinary manpower was or is available in Mexico to do it any other way. Is this sound and right? Will it eventually get results?

c) We are hearing all over again that properly trained laymen must be used to test cattle for tuberculosis, or, at least, to inject the tuberculin. Does the current stepped-up program of tuberculosis testing in many states make this necessary? In earlier years, practitioners used to leave their areas for a while to go into other counties to do such testing. Can they do this again, or are the people in their own communities depending on

them to such an extent that it is not feasible for them to leave even for a short time? Will lay-testing get results or is there danger of fraudulent testing that would nullify the efforts? This has happened in some other fields in the past. Do laymen have different ethical standards and obligations to society than do veterinarians and physicians? Years ago, in some places in the South, it was said that laymen failed to control and eradicate cattle tick fever, where subsequently veterinarians succeeded because of a sense of professional responsibility. Not many, if any, disease control measures require less technical training than the dipping of all cattle in an area at stated intervals. And, if laymen failed to carry out faithfully such simple but vital procedures, can they be relied upon to execute delicate techniques, such as diagnostic injections? The answer is important.

d) Is it proper and sound for the busy, small animal practitioner to have a lay assistant to administer vaccines and medicines, collect blood samples, etc., etc.? It is being done.

e) Is it right for veterinary students who have finished their junior year to work with and for a practitioner during the summer and then "handle" his practice while the tired practitioner takes a vacation at the end of the summer? Many consider this type of training with an older practitioner as extremely valuable, even indispensable. Such a student has no legal license to practice veterinary medicine. Is it a form of quackery? Has such a student a right to continue in practice, on the side, during his senior year?

3) What about the old chestnut, poultry practice? It simply will not suffice merely to say that poultry practice is a task for a veterinarian. The poultryman has used the low unit value of his product as an excuse for by-passing the veterinarian. He has, therebv, tried to put the veterinarian in competition with the feed salesman, hatcheryman, and other laymen. But the poultry industry cites returns of millions of dollars to farm families. Poultrymen point out that, many times, the local veterinarian either won't look at their sick chickens or can not solve their disease problems if he does attempt to do so. And some of the best country practitioners freely confess that they haven't the time and energy to handle poultry practice.

4) Is it right for states to provide diagnostic services in laboratories at public expense? Should such laboratories confine their activities solely to diagnosis, or should they also recommend treatment and control procedures? Should such recommendations and reports be made only to the practicing veterinarian or should they also be available to the owner?

5) Are we following the lead of human medicine in entering a period of specialization in veterinary practice? Certainly, veterinary knowledge and skills have far surpassed the level where any one man can master all of them. Specialization in veterinary practice is already well developed in small animal medicine and surgery, especially in our larger cities. Are we heading into a period when more country practitioners will find it to their advantage to concentrate and specialize in the diseases of hogs or cattle, or reproduction and sterility, or in other fields?

6) Will the current war, and preparations for defense mobilization reduce the number of veterinarians to a point where clients will be forced to turn to lesser-trained groups with some of their animal and poultry disease problems? Or will lower livestock price levels reduce the demand for veterinary services?

7) The record shows most clearly that under past and present conditions there has been a big and rapid turnover in state veterinarians in many important livestock states. These positions carry important responsibilities. These men administer large budgets of tax dollars. In human medicine, physicians with special advanced training in public health are more and more being selected as commissioners of public health. Will the public demand a change in the type of veterinarians filling the positions of livestock sanitary officials? Should a state veterinarian have special training in veterinary public health? Should the profession help to avoid the big turnover of men in these positions, that now takes place in many states, by advocating that state control work in animal diseases be put on a

more stable basis, with more secure tenure of office for state veterinarians? Should the profession advocate that these positions afford opportunities for career-minded men —positions where a veterinarian can perfect and carry out a program over a period of years for the benefit of the public and the livestock industry?

8) One of the most vexing problems of the U. S. Bureau of Animal Industry is personnel. The livestock industries need a highly efficient bureau of animal industry. Should there be, as has been publicly proposed, a single veterinary disease-control officer in each state representing both the state and federal governments? There are obviously many valid arguments on both sides. Even the old controversy of "state rights" *vs.* federal bureaucracy is involved.

9) Will the old-time but currently much more troublesome problems in our methods of hog cholera control result in change? Is the current demand for a program to eradicate hog cholera going to amount to anything? Even a superficial observation reveals that a considerable percentage of the practitioners in the Cornbelt derives an appreciable part of their income from vaccinating hogs against cholera. Also, informed veterinarians agree that cholera is *still* the No. 1 disease enemy of the swine industry. Will the brood sow continue to be the mortgage lifter for the Cornbelt farmer?

10) In this antibiotic and "miracle drug" age, will certain disease problems be solved by animal owners without the help of veterinarians? How many swine and poultry diseases will be controlled satisfactorily by the current wide-spread practice of putting antibiotics and other drugs in mixed feeds? How about udder infusions for treatment of mastitis in cattle? Perhaps we should not, as a profession, forget the circumstances which resulted in laws permitting farmer vaccination for hog cholera.

This list could be much longer.

It is submitted merely with the hope that it will be thought-provoking and in turn helpful toward progress. We must go ahead —we can't stand still. We must face change, and meet it, and guide it. Far-seeing and courageous leadership is perhaps more urgently needed now than ever before in our profession. The collective thinking of all veterinarians is imperative. We are going ahead—making progress—but in this fast-moving age, we must make wise decisions more rapidly than in the past.

Certainly the veterinary profession must be a part of the answer, not a part of the problem.

Dr. C. M. Haring
1878-1951

Dr. Clarence Melvin Haring, emeritus professor of veterinary science, University of California, and secretary of the American Veterinary Medical Association in 1915-1916, died in Berkeley, Calif., on July 10, 1951, at the age of 73.

Dr. C. M. Haring

Born in Freeville, N. Y., June 1, 1878, Dr. Haring received his veterinary medical degree from New York State Veterinary College at Cornell University in 1904, having received his preliminary education in the public schools and at Colgate Academy. He was a student assistant in veterinary anatomy at Cornell in 1903-1904, and after graduation went to the University of California where he served continuously for forty-four years until his retirement in 1948. He was, first, instructor in veterinary science, later, assistant professor, also veterinarian and bacteriologist at the Agricultural Experiment Station, 1910-1913, and director of the same from 1920 to 1924.

From 1924 to 1925, he studied at Zurich University in Switzerland. He was professor of veterinary science at the University from 1913 until his retirement.

In 1947, Dr. Haring became first dean of the newly established school of veterinary medicine for which he had been largely responsible in organizing the faculty and curriculum. He was well known for his work on bovine tuberculosis and hog cholera and was one of the first to study equine encephalomyelitis. He also did much work on bovine brucellosis being particularly interested in Brucella vaccines. From 1911 to 1918, he was director of the California State Anti-Hog Cholera Serum Laboratory, at the time when serum and virus were largely produced by state agencies.

During World War I, Dr. Haring saw active duty in the Veterinary Corps, first at Camp Greenleaf, then as an instructor at the Veterinary Training School at Camp Lee, and later with Veterinary Hospital No. 24 at the same station. He was discharged with the rank of Captain in 1919. During World War II, he was chairman of the California State Veterinary P & A Service and was regional veterinary consultant.

In addition to his AVMA membership which had been continuous since graduation in 1904, Dr. Haring was active in other organizations including the U. S. Livestock Sanitary Association, Research Workers in Animal Diseases, Society of American Bacteriologists, and the California State V. M. A. of which he was secretary in 1906 and president in 1917. He was also a fellow of the A.A.A.S. and a member of Sigma Xi, Alpha Zeta, Delta Omega, Phi Zeta, and the Masons.

Dr. Haring married Grace I. Moody in 1908; she passed away in 1949. Funeral services for Dr. Haring were held at Fountain View Cemetery, Oakland, on July 12 and were attended by many members of the veterinary profession, representatives of the University, and livestock and agricultural organizations of the state.

Common Poultry Diseases in India.—The following are the most common poultry diseases occurring in India: (1) Ranikhet (Newcastle) disease; (2) fowlpox; (3) coccidiosis; (4) spirochetosis; and (5) avian leucosis complex.—*Indian Vet. J., March, 1951.*

Definitions of Feed Supplements

Livestock and poultry producers have been anxious to understand the "wonder" drugs referred to as the animal protein factor (APF) which was reported to speed growth rates and fattening when fed to livestock.

However, the reports were confusing in many cases. Results were attributed to feeding of commercial products, some of which contained one antibiotic or another and some included more than one antibiotic plus vitamin B_{12}. These are different products but most of the reports referred to them generally as the "APF" or "APF supplements."

The antibiotic feed supplements used in mixed feeds are the by-products of the fermentation in the manufacture of penicillin, streptomycin, aureomycin, terramycin, and other antibiotics. Furthermore, vitamin B_{12} is naturally present in these fermentation products in varying amounts.

Last fall the Association of American Feed Control Officials adopted definitions which eliminated the terms "animal protein factor" and "APF" in registered feed. The definitions are as follows:

Vitamin B_{12} supplement is a feeding material used for its vitamin B_{12} activity. It shall contain a minimum vitamin B_{12} activity of 1.5 mg. per pound. The term shall not be applied to products for which there are accepted names and definitions.

Antibiotic feed supplement is a feeding material used for its antibiotic activity. It shall contain a single antibiotic or combination of antibiotics having growth promoting properties. The name and amount of each antibiotic shall be declared on the label. It shall contain a minimum of 1 Gm. per pound of antibiotics.

The label shall bear the legend "for feeding use only." Directions for use shall provide for incorporating not more than 50 Gm. of antibiotic per ton of finished feed.

The executive committee also adopted the following resolution:

Resolved, that if a feeding material is represented to be a combined vitamin B_{12} and antibiotic feed supplement, it shall meet the potency standards and other label and informational requirements established for each component.—*Professor P. B. Curtis, Purdue University, Lafayette, Ind.*

The training of students must include practical knowledge as well as theoretical, and one year's internship seems to be the most practical means.—*Dr. C. L. Jones, President, Utah V.M.A.*

Dr. C. S. Bryan
1908 - 1951

Dr. Claude Stever Bryan, 43, dean of the School of Veterinary Medicine, Michigan State College, died at University of Michigan Hospital, Ann Arbor, on July 30, 1951, after a brief illness. Cause of death was aplastic anemia.

Dr. Bryan first joined the Michigan State staff in 1930 as a graduate assistant in bacteriology and was later, successively, assistant professor, associate professor, and professor of bacteriology and public health, before he joined the veterinary faculty.

Born June 5, 1908, in Bedminster, Pa., he received his B.S. degree from Pennsylvania State College in 1930 and his M.S., Ph.D., and D.V.M. degrees from Michigan State College in 1932, 1937, and 1942, respectively. After graduation from the veterinary school, Dr. Bryan became professor and head of the department of surgery and medicine and then succeeded the late Dr. Ward Giltner as dean of the school upon the latter's retirement in 1947. He continued the work of Dr. Giltner in building the School of Veterinary Medicine at M.S.C. into one of the best in the country. He put much effort into the work which culminated in the building of Giltner Hall, the college's new veterinary medical center, now nearing completion.

Widely known as an educator and scientist, Dr. Bryan was an authority on bovine mastitis and dairy hygiene on which subjects he lectured before many groups throughout the country. He was an excellent teacher who interested and inspired his students. In 1950, Dr. Bryan was elected to honorary membership in the Mexican Society of Veterinary Doctors for his outstanding work in the profession.

He was secretary of the Association of Deans of American Colleges of Veterinary Medicine and a past-secretary of the Division of Veterinary Medicine of the American Association of Land-Grant Colleges and Universities. His professional affiliations included the AVMA, American Public Health Association, International Association of Milk Sanitarians, U. S. Livestock Sanitary Association, Conference of Research Workers in Animal Diseases, American Dairy Science Association, Michigan State Veterinary Medical Association, Michigan Association of Dairy and Milk Inspectors, Michigan Academy of Arts, Sciences and Letters, and the Society of American Bacteriologists.

He was also a member of Kiwanis and on the board of elders of the People's Church, East Lansing, from which funeral services were held on August 2.

Dr. C. S. Bryan

Dr. Bryan is survived by his widow, Mrs. Jean Miller Bryan and two daughters, Marjorie Ann and Nelda Jane; also his parents, five brothers, and two sisters. A brother, Dr. Harold S., is on the veterinary faculty at the University of Illinois.

President John A. Hannah of Michigan State paid tribute to Dr. Bryan in a statement pointing out his fine record as a scientist and a teacher, and said that it was largely through Dean Bryan's vision and efforts that the integrity and morale of the faculty were maintained during the difficult postwar years, looking forward to the completion of facilities for the school and the Department of Bacteriology where he worked and taught for so many years; that the new building, while officially a memorial to Dean Ward Giltner, would also be a memorial to Dean Bryan because of the time, thought, and energy he had devoted to its planning.

To the hundreds of friends of Claude Bryan, his untimely passing at the very beginning, almost, of a highly promising career in veterinary education and science, is a tragic event and bereavement. His always friendly smile and engaging manner will be greatly missed but long remembered.

CURRENT LITERATURE

ABSTRACTS

Agglutinins in Genital Organs of Brucella-Infected Cows

The authors demonstrated that a local formation of agglutinins may take place in the genital organs of Brucella-infected cows. Fluid expressed from uterine mucosa of 39 cows was examined. In 14 cases, positive agglutination was found, the titers varying from 5 to 1,280. In 1 case, no agglutinins were demonstrable in the blood, and in 2 other cases, uterine titers were higher than the corresponding blood titers. Three strains of *Brucella abortus* were cultivated from the uterine mucosa of animals showing high uterine titers. A technique for collecting fluid for agglutination tests from the vagina of live animals, developed by L. Szabo, was used in two herds that had recently been freed from blood reactors but where reinfections had occurred. A number of cows with negative blood titers but positive vaginal titers were found. Two of these later developed positive blood reactions and aborted. After abortion, very high vaginal titers developed.—[*Aage Jepsen and Torben Vindekilde: The Occurrence and Significance of Agglutinins in the Genital Organs of Brucella-Infected Cows. Am. J. Vet. Res., 12 (April, 1951): 97-99.*]

Incidence and Distribution of Brucellosis in Reactor Cattle

In considering the occurrence of brucellosis in packinghouse workers, the Brucella reactor cow has received inadequate attention. It has been frequently stated that in reactor cattle the organism is found mainly in the uterus and the udder; hence, the remainder of the carcass provides little or no exposure hazard to the worker.

In this study, the carcasses of 100 Brucella reactor cattle were examined. Unselected except for the known positive Brucella reaction, all were dairy breeds derived from herds in five Middlewest states. The series comprised 88 cows, 9 heifers, 2 calves, and 1 bull.

During bleeding, a blood sample was obtained for an agglutination test. At various stages of the dressing process, tissues were obtained for culture. Accessible lymph nodes in widespread areas of the carcass, tonsil, sections of liver, spleen, uterus, and membranes and fetus, if present, were obtained. Under plant conditions, the mammary gland was not accessible.

Of the 100 cattle examined, *Brucella abortus* was recovered from one or more areas of the carcass in 42 animals. In 29, the organism was obtained from locations other than the uterus or supramammary lymph nodes. In 10 of these, *Br. abortus* was isolated from numerous locations in widespread areas of the carcass.

The isolation of *Br. abortus* from numerous sites in a significant number of the animals examined emphasizes the potential exposure to Brucella encountered by personnel engaged in processing the carcasses of brucellosis reactor cattle.—[*N. D. McCullough, C. Wesley Eisele, and Anne F. Byrne: Incidence and Distribution of Brucella Abortus in Slaughtered Bang's Reactor Cattle. Pub. Health Rep., 66, (1951): 341-345.*]

Bovine Brucellosis Control in Alberta

Alberta is a large province, three times the size of the British Isles, and has its share of bovine brucellosis.

Individual cattlemen have suffered severe economic loss, as happens wherever the disease occurs.

There have been many cases of undulant fever, both in the rural and urban population. This has stirred up many communities to seek definite action in controlling bovine brucellosis.

A report on brucellosis control in Alberta is given covering education, calfhood vaccination, and blood testing.

The compulsory calfhood vaccination plan is described.—[*E. E. Ballantyne: Bovine Brucellosis Control in Alberta. Canad. J. Comp. Med. and Vet. Sci., 15, (1951): 101-107.*]

Infectious Bronchitis

Respiratory symptoms were observed within a minimum of twenty-four hours and a maximum of six days after inoculation with a chicken-propagated virus in a series of 118 inoculation trials involving 337 susceptible chickens ranging in age from 2 to 35 weeks. The majority of chickens manifested symptoms for one to eleven days. Neutralization of the virus by serums from recovered birds was demonstrated when virus and serum mixtures were inoculated into embryonating eggs. Neutralizing substances were detected eleven to thirty-six days postinoculation and in 1 case persisted for at least 483 days. In some chickens, the duration of immunity was protracted. The serum-neutralization test using the embryo method, and the bird-inoculation method with an infective virus, may be useful procedures in evaluating flock immunity for infectious bronchitis. A rapid decline in egg production (70.0 to 2.4%) may occur together with a marked alteration in the exterior

and interior quality of the egg such as misshapen appearance, rough and thin shell, bleached color and watery albumen. Natural outbreaks of the disease may be prevented in laying flocks through the inoculation of birds during the growing period. —[*H. Van Roekel, M. K. Clarke, K. L. Bullis, O. M. Olesiuk, and E. G. Sperling: Infectious Bronchitis. Am. J. Vet. Res., 12, (April, 1951): 140-146.*]

Reactions of Mercurial Diuretics with Mono- and Dithiols

A recent review on renal transport mechanisms is summarized as follows: "There can be little doubt that the kidney is the principal site of the diuretic effect of the mercurial agents . . . . In general, mercurial agents combine with sulfhydryl groups, and this is responsible for their inhibitory effect on a number of essential cellular dehydrogenases. That the diuretic effect of mercury is attributable to the inhibition of such enzymes seems likely . . . ". The purpose of this communication is to describe certain reactions that occur *in vitro* between mercurial diuretics and thiols and to discuss their physiologic significance.

In summary, it is felt that a mercurial diuretic, whether of the xanthine or mercaptide type, circulates in the blood as a mercaptide derived either from a simple monothiol or a protein. At the site of mercurial diuresis, a reaction may occur between the mercurial and an enzyme bearing essential sulfhydryl (SH) groups. If there is more than one SH group present on the same molecule, the mercury may be removed from the parent drug and temporarily bound. Rapid reactivation of the enzyme and excretion of the mercury undoubtedly occur, however, since no permanent damage is done to the kidney even on frequent administration over long periods. Removal of mercury from such an enzyme-mercury complex by BAL with suppression of diuresis would be anticipated, and resumption of diuresis could occur from fresh mercurial agents presented to the kidney.—[*J. F. Lehman, L. P. Barrack, and R. A. Lehman: Reactions of Mercurial Diuretics with Mono- and Dithiols. Science, 113, (1951): 410-412.*]

Effect of Vitamin B_{12} and Liver Meal on Hematology of Chicks

Three groups of chicks (10 in each group) were fed a basal ration whose protein was of all-plant origin; three other groups were fed the same ration except 3 per cent liver meal replaced 3 per cent soybean meal; and the remaining three groups were fed 0.5 per cent APF supplement in place of 0.5 per cent soybean meal. The APF ration contained 62.5 μg. of vitamin B_{12} per pound. Erythrocyte, leucocyte, and differential counts were determined on blood samples from the 90 chicks. Hemoglobin determinations, hematocrit readings, and sedimentation rates of erythrocytes at one-half, one, two, three, and six hours were also made. These observations were made again on blood samples from 4 chicks in each pen toward the end of the experiment in order to determine age effect. Statistic analyses of these data were made. A significant difference was found between the hemoglobin levels of the female chicks fed the basal and liver meal rations while no significant difference existed between the hemoglobin levels of chicks fed the basal and APF rations. The hemoglobin levels of the male chicks fed the three rations were not significantly different. The packed erythrocyte volume of female chicks fed the basal and liver meal rations approached the 5 per cent level of significance. Treatment effects on erythrocyte counts, total leucocyte counts, differential counts, sedimentation rates, plasma volume, and packed leucocytes and thrombocytes were not significant. Environmental effects produced a highly significant difference in the basophil counts of male chicks, a significant difference in the sedimentation rate of erythrocytes of male chicks in one-half hour, and in female chicks a significant difference in the total leucocyte counts, lymphocyte counts, and sedimentation rate of erythrocyte in two hours. Age (21-37 days) produced a highly significant difference in the hemoglobin levels of chicks and a significant difference in the eosinophil counts, whereas the remaining blood determinations had not changed significantly.—[*M. J. Swenson: Effect of a Vitamin B_{12} Concentrate and Liver Meal on the Hematology of Chicks Fed an All-Plant Protein Ration. Am. J. Vet. Res., 12, (April, 1951): 147-151.*]

Egg-Adapted Modified Canine Distemper Virus Vaccine

A virulent strain of distemper virus was successfully adapted to grow in the developing chicken embryo. After 26 serial passages in the chicken embryo, its virulence for the ferret was lost, but the modified virus still protected this animal against several hundred lethal doses of the parent strain of virus.

Several hundred ferrets were injected with a vaccine prepared from the modified avianized virus and were proved to be immune to distemper infection upon challenge with fully virulent virus under experimental conditions.

Distemper-susceptible puppies developed substantial titers of neutralizing antibodies following a single injection of avianized virus and showed no visible evidence of disease when challenged with a massive dose of virulent virus.

Most gratifying results were obtained with the avianized vaccine on mink treated after distemper had appeared on the premises. Mass vaccinations stopped the spread of the disease, and laboratory evidence was obtained that vaccinated kits became resistant to experimental infection with virulent

virus of the homologous type isolated from the premises.

Field immunization of dogs of 19 different breeds, ranging in age from 5 weeks to 2 years, has shown the avianized virus vaccine to be safe upon injection, and it induces no visible systemic or local reactions. Several of the vaccinated animals were exposed to either clinical distemper cases or in distemper wards without showing any evidence of infection as a result of exposure.—[*V. J. Cabasso, R. L. Burkhart, and J. H. Leaming: The Use of an Egg-Adapted Modified Canine Distemper Virus Vaccine Under Experimental Conditions and in the Field. Vet. Med., 46, (1951): 167-175.*]

FOREIGN ABSTRACTS

Placentation in Bovidae

This report of original work has only two references to related literature, one of these being to a work of the authors (Drieux and Thiery, Rec. Méd. Vét., *125*, (1949): 437). The impregnated ovum enters the uterine cornu at about the third day, unsegmented or sometimes in the two-blastomere stage. At the fifteenth day, the embryo measures nearly 1 cm. in length, its neural tube is nearly closed, and 12 pairs of mesodermal somites are present. The amniotic folds are in the course of fusing, forming an amniotic sac which upon at least half of its surface remains fused to the extra-embryonic ectoblast of the extra-embryonic mesoblast which at this place does not show extra-embryonic celom. The yolk and allantoic sacs extend into the extra-embryonic celom; the allantois forming a bell-clapper-like tube extending toward each extremity of the embryo at the same time the yolk sac retrogresses.

After the fifteenth day, necrosis of the apices of the fetal membranes occurs, while the amniotic contact with the chorion is increased. At this period, the chorionic surface becomes roughened by small villous proliferations which make a loosely attached surface for absorption from nutritive material secreted by the glands. These villi form a transitory diffuse chorion.

At about the thirtieth day, the well-developed allantois lines the chorial sac, excepting where it is fused to the convexity of the amnion. The exterior surface of the chorion is still roughened by the primitive diffuse distribution of villi; however, certain clumps of villi appear more exuberant and bushy. These tufts, cotyledons, are arranged in four to six rows paralleling the long axis of the fetus and coincide topographically with corresponding raised areas, caruncles, on the maternal mucosa. Later changes include: (1) the elongation of the extremity of the chorial sac into the corpus uteri then into the basal region of the nongravid horn where a number of cotyledons are formed; (2) growth of the amniotic sac which eventually occupies about one-third of the volume of the chorial sac; (3) reduction of the allantois to a sausage-like sac placed obliquely on the amnion, its middle part flat and narrow and its extremities becoming voluminous and cylindrical, everywhere in contact with the chorion; (4) reduction of the yolk sac to a fine tract located in the umbilical cord; (5) increase in volume of the 120 to 140 cotyledons; (6) the regression of some precariously formed cotyledons and the disappearance of the intercotyledonary villi.

The fact that in Bovidae there is an allantochorian and an amniochorian does not affect the structure of the placentary cotyledons. The allantochorionic cotyledons however are more abundant. Epithelial cells of the glands opening into the intercotyledonary areas are cylindrical with dense apices, the Golgi zone is distinct on the apical sides of the nuclei and they contain no mucus and very little glycogen. These cells appear very active, producing a slightly basophilic secretion. Drieux and Thiery say the cotyledon is in reality an aggregate of elementary microcotyledons. The caruncular compartments which lodge the cotyledonary villi are lined by some cubical epithelial cells with pointed apices, with spherical centrally located nuclei containing small clumps of chromatin. Basally, these cells gave histochemical reactions for a mixture of glycerides and lecithins, while in the attenuated apices some granules of glycogen were present. A second more rare type of cell, polyhedral in shape, was found among the cubical cells and showed voluminous nuclei, sometimes double, and more or less rich in chromatin. The cytoplasm contained very little fat and no glycogen. The epithelial cells of the chorionic villi were tall, cubical, and had large chromatic nuclei. Glycogen granules were found apically, while lipids were found basally. Also, there were numerous binucleated large cells with either finely granular or homogeneous and chromophilic cytoplasm, both of which types took mucicarmine staining, rarely fat in these cells but regularly glycogen. Drieux and Thiery describe sanguineous caps extending entirely around the cotyledons. In some areas, the maternal epithelium is completely desquamated from the subjacent connective tissue layer. In such affected connective tissue areas, some capillaries appear to be ruptured, thus liberating their corpuscles into the resorption cavities. Opposite this mass of desquamated material, epithelium and degenerating blood corpuscles are short and thick pendant chorionic villi covered by a continuous but quite irregular epithelium, of which the majority of the cells present ciliated borders, contain little glycogen. Some are filled with brown pigmented granulations of ferruginous nature. Mixed with the above cells are often some binucleated cells. The blood vessels run in a mucous type of highly cellular connective tissue. The interior surface of the chorion may be covered by an endothelial form of allantoic epithelium, may be by a cubical amniotic epithelium with here and there multi-stratified thick plaques

whose cells are rich in glycogen. In the zone of resorption, the summit of the maternal partitions spreads out to form a sort of plateau of dense connective tissue on the surface of which is a nearly continuous covering of cubical cells which tend to fuse into a plasmodium. The fetal chorion opposite this plateau has no villi and its epithelium appears to be composed of unistratified cells, each with a vibratile process. The pigment of the chorionic cells is augmented and the large mucicarminophile elements appear to be decreased. The activity of this zone appears to diminish in proportion to the advancement of gestation. The paraplacenta composing the intercaruncular uterine wall in contact with either the intercotyledonary allantochorion or amniochorion varies in structure with the period of gestation. Some tufts of villi, remnants of the original diffuse placenta, projecting into crypts in the uterine mucosa, evidence at those months advanced degeneration. At five months, the paraplacenta is quite simplified, the uterine glands are reduced but dilated, the uterine epithelium is continuous, the crypts have become very shallow, most of the chorionic villi have disappeared, there being some short and thick chorionic epithelial covered prominences which do not penetrate the uterine mucosa. There are some elementary caruncles still in the course of regression. From the seventh month to term, the paraplacenta is composed of a smooth stratified chorionic epithelium and the uterine mucosa with a greatly reduced glandular layer. Drieux and Thiery state that due to the dehiscense of the placental membranes at parturition and the quasitotality of uterine epithelium, the terms transitional and epithelio-chorial are applicable to the bovine type of placentation.—[*H. Drieux and G. Thiery: Placentation in the Domestic Mammals. III. Placenta of Bovidae (title translated). Rec. Vét., 127, (1951): 5-25.*]—H. L. FOUST.

Congenital Goiter in Calves in Sweden

Distribution curves of the weights of thyroid glands from 261 calves up to 4 months in age showed that the greatest frequency occurred in the range of 8 to 12 Gm. Goitrous glands weighed 25 Gm. or more. Histologic evidence of hyperactivity was found in some thyroid glands of normal size. Seventy-six per cent of the goitrous cases had an iodine content of less than 30 mg. per 100 Gm. of thyroid gland, whereas 38 per cent of normal glands had less than 30 mg. of iodine per 100 Gm. of thyroid gland. There is evidence that iodine deficiency may not be the only factor involved. The geographic distribution of goiter in calves corresponds to that of human cases in Sweden.—[*Anna-Lisa Obel, K. Sjoberg, and H. Sandstedt: Congenital Goiter in Calves in Sweden (title trans.). Nord. Vet.-med., 2, (1950): 491-507.*]—A.G.K

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Involution of the Bovine Uterus

In primiparae, involution is completed in approximately twenty days while in multiparae, it may require twenty-five days. Dissolution and detachment of the caruncular stalk is complete on the tenth postpartum day. The amount of lochia formed varies. It may be absorbed in some primiparae, but older cows may discharge up to 2,000 ml. Although involution is normally an aseptic process due to ischemia of the caruncular stalk and dissolution of the decidua, there is often evidence of infection. It was found that the uterine contents of normal cows were infected in 30 per cent of some herds. There is an accompanying change in the character of the lochia when infection occurs. This is a detailed paper illustrated with 12 photomicrographs of different stages of involution.—[*N. O. Rasbech: The Normal Involution of the Uterus in the Cow (title trans.). Nord. Vet.-med., 2, (1950): 655-687.*]—A.G.K.

Penicillin Therapy of Mastitis

Since penicillin is active only against dividing bacteria, it is necessary to keep an active concentration of the drug in the udder as long as bacteria can divide. This is estimated at five to six days. Infusion of 25,000 units of penicillin in water results in a detectable amount of penicillin in the milk for twenty hours. Increasing the dose does not prolong the effect. However, the duration of activity may be increased up to seventy-two hours by using oil suspensions with aluminum monostearate. Procaine penicillin was not found to be especially effective. In a normal cow given 100,000 units by udder infusion, about 80 per cent of the penicillin was recovered in the milk and about 3.6 per cent in the urine. This was in contrast to a case of mastitis where only 27.3 per cent was recovered in the milk and 7.4 per cent in the urine. It was concluded that inactivation of the penicillin takes place in the inflamed glands. —[*Aage Jepsen: Penicillin Therapy of Mastitis. Investigations on Elimination and Absorption of Penicillin After Intramammary Infusion (title trans.). Nord. Vet.-med., 2, (1950): 447-480.*]—A.G.K.

Diagnosis and Treatment of Mastitis

Milk specimens from 889 cows were tested by two methods: (1) direct inoculation of serum agar slants which failed to detect 13.5 per cent of infected cows, and (2) primary incubation of milk specimens followed by inoculation on blood agar containing 0.1 per cent esculin which failed to detect only 0.5 per cent of the infected animals. In another series of 284 cows, these methods were compared with a procedure consisting of direct inoculation of blood agar containing thallium sulfate 1:3,000, and esculin 1:1,000. The two methods given above revealed, respectively, 2 per cent and 12 per cent more infected cows. It is

recommended that in infected cows both the infected quarters and the noninfected quarters be treated with penicillin in oil by the use of bougies.—[*Ole Romer: Problems Concerning Mastitis, Especially Diagnosis and Treatment (title trans.). Nord. Vet.-med., 2, (1950): 559-580.*]—A.G.K.

Adaptation of the Body of the Cow to Pregnancy

Various diseases are considered in the light of Selye's theory of diseases of adaptation. The adaptation of the body to pregnancy may lower the resistance to other forms of stress which becomes manifest at the end of gestation. In all the cases of puerperal paralysis and eclampsia examined postmortem, the adrenal glands were enlarged due to hypertrophy of the cortex. The increased cortical activity is the basis for the electrolyte imbalance which is found in these diseases. The loss of potassium in the milk and its mobilization in the liver during synthesis of glycogen previous to parturition is also great. The eosinophilia and the lymphopenia in these diseases is also evidence of the increased activity of the adrenal cortex.—[*Otto Garm: Investigations on Puerperal Paresis, Antepartum Paraplegia, Puerperal Eclampsia, and Grass Tetany in Cows. A Preliminary Report (title trans.). Nord. Vet.-med., 2, (1950): 751-764.*]—A.G.K.

Swine Influenza in Japan

This is the first report of the presence in Japan of influenza in swine in which a viral agent was demonstrable. The disease resembled the "ferkelgrippe" of Germany rather than the swine influenza of America.—[*Y. Ochi and K. Miyairi: Studies on Swine Influenza. I. The Observation of Natural Outbreak and Isolation of Virus. Jap. J. Vet. Sci., 5, (1943): 275.*]—A.G.K.

Semen Studies

The prediction of the probability of good breeding results includes the factor of macroscopic and microscopic examination of the semen.

Physical-Chemical Examination.—Quantity of ejaculate. According to the species, this may vary from 0.8 to 500 cc., the first for young rams, the last for boars. As a rule, the amount in bulls varies from 0.5 to 14 cc. with an average of 4.5 cc.

Color.—The color is also characteristic for the species.

Density.—Macroscopically, the author classed semen as dense or heavy, semiliquid and fluid. The density may be altered by ration received, condition of the animal, and frequency of breeding.

pH.—Semen has a pH of 6.5 to 7.5. Its pH may be altered by the accessory secretions, for example, the epididymis and semical vesical secretion varies from 5.5 to 6.7. Secretions of the prostate and the glands of Cowper vary in pH from 7.2 to 8.0. The alkaline secretions stimulate the spermatozoa to great activity and movement, whereas, a lowering of the pH inhibits motility. This explains the practical necessity of protecting semen from exposure to air; this increases the alkalinity greatly, and thus shortens the life of the sperm.

Microscopic Examination.—Table 1 gives an indication of the number per cubic millimeter.

TABLE I

Species	No./cmm.	Vol. of ejaculate (cc.)	Vol. necessary to inseminate
Bulls	800,000	4.5	0.5 to 15.0
Stallions	60,000	75 to 150	10.0 to 30.0
Rams	1,000,000	0.8	0.1 to 0.8
Boars	100,000	200.0	50.0 to 100.0
Dogs	2,000,000	7.0	
Rabbits	700,000	0.7	0.25 to 1.0
Roosters	500,000	0.6	0.1

The following formula for staining the semen to examine for microscopic pathologic morphology was suggested:

Methylene blue 1%	30.0 cc.
Potassium hydroxide 2%	60.0 cc.
Glacial acetic acid	0.5 cc.

—[*Armando Chieffi; Semen Studies. La Res, 19, (1951): 640.*]—G. T. EDDS

Toxaphene for Controlling Boophilus Microplus

Emulsified toxaphene is an excellent cattle tick dip against *Boophilus microplus*. At concentrations between 0.47 and 0.7 per cent, cattle are completely cleaned of ticks within nine days after a single dipping and are protected against reinfestation for twelve more. All ticks present on the animals die within forty-eight hours; this includes metalarvae and engorged females, but not metanymphs, as the only exception. Engorged females do not ovideposit.—[*C. N. Ault: The Employment of Toxaphene for Controlling Boophilus Microplus. Gaceta Vet., 12, (1950): 208.*]—G. T. EDDS

Newcastle Disease and "Virofral"

A new commercial biological product against virus diseases was tested *in vivo* and *in vitro* against Newcastle disease virus. In chickens, a treatment at the onset of symptoms, after artificial infection, failed to influence the lethal course of the disease. When applied twenty-four hours earlier, simultaneously, and twenty-four and seventy-two hours after infection, 4 of a total of 19 chickens survived. The results do not appear to warrant its recognition as a product of practical value. Newcastle disease virus mixed with the medicine (diluted 1:10 and undiluted) kept at room temperature and inoculated into 10-day-old embryonating chicken eggs after various intervals did not demonstrate a measurable loss of pathogenicity after twenty-four hours.—[*E. deBoer and J. Donker-Voet: Newcastle Disease and "Virofral." Hemera Zoa, 57, (1950): 765-773.*]—L.V.E.

Salmonella Carriers Among Healthy Swine

Of the aërobic bacterial flora of the mesenteric lymph nodes of 150 healthy pigs from six farms near Bogar (West Java), only 50 samples proved sterile. At the same time the blood, cervical lymph nodes, liver, spleen, kidneys, and the gastric and intestinal contents were checked for the presence of Salmonella organisms in 25 animals. Salmonella were isolated from one or more of the samples. In streak cultures on plates from the primary cultures, 10 Salmonella colonies were chosen at random and checked for their serological and biological characteristics. Of 400 strains collected in 1940-1941, eight were identified. In nearly all samples, different strains were present close to one another.—[*T. C. Kraneveld, M. Erber, and Mob. Mansjoer: Salmonella Carriers Among Healthy Swine. Hemera Zoa, 57, (1951): 48-70.*] —L.V.E.

Edema Disease

The authors describe the so-called "edema disease" which is common in Belgium. Typical symptoms are: no rise in temperature, change in voice, edema of eyelids, incoördination of movements, and eventually paralysis. Palpation of affected pigs appears to be painful. The autopsy reveals, in most cases, edema of the eyelids and the wall of the stomach. There is some excess of peritoneal, pleural, and pericardial fluid, varying in volume. Epicardial petechiae are frequently observed. The administration of caffein, calcium gluconate, and antihistamine products was successful in treating the disease, especially in the beginning. Dosing with purgatives and fasting also seemed to prevent further losses.—[*M. Ide and G. Sierens: Edema Disease (Slingerziekte). Vlaams Diergeneesk. Tijdschr., 20, (1951): 700-703.*]—L.V.E.

Pharmacology of the Ruminant Forestomachs

The innervation of the ruminant forestomachs belongs to the autonomic nervous system and is influenced by neurovegetative preparations. Tetany is easily produced by stimulating, paralysis by sedative preparations, whereby the coördinated peristalsis is diminished or inhibited. Oral application of such substances may concentrate its effect on the forestomachs, depending on the reaction of the esophageal groove, eventual chemical reactions with the stomach contents (enzymes, microbes, etc.), and absorption by the stomach wall. Little is known on the pharmacologic influences on the rumination mechanism. Apparently it may be increased by stimulating the motor action. A classification of the medicaments based upon well-known or hypothetic effects is discussed. —[*H. Graf: Pharmacology of the Ruminant Forestomachs. Schweiz. Arch. f Tierheilk., 93, (1951): 35.*]—F. KRAL.

Physiology of the Ruminant Forestomachs

The main problems of the physiology of the forestomachs are discussed, such as: esophageal groove reflex, motor functions of the forestomachs, rumination, ructus and its relation to tympany. The chemical parts include: general significance of the microflora and fauna of the forestomachs; action of bacteria for the decomposition of cellulose; the synthesis of amino acids, proteins, and vitamins; activity of fungi, protozoa, and formation of gases in the rumen and their relation to tympany.—[*H. Sporri: Physiology of the Ruminant Forestomachs. Schweiz. Arch. f Tierheilk., 93, (1951): 1*]—F. KRAL.

BOOKS AND REPORTS

Diagnostic Methods in Veterinary Medicine

This edition, released from wartime restrictions of format, lends itself to much easier reading than does the second edition.

The renaming of Chapter XV to "Clinical Biochemistry" and including blood analysis is a happy addition. It is hoped that even further expansion of clinical biochemistry will be made.

The book is a handy reference for both the student and the practitioner.—[*Diagnostic Methods in Veterinary Medicine. By George F. Boddie. 3rd. ed. 389 pages. Illustrated. J. B. Lippincott, Philadelphia. 1951. Price $5.00.*]—JOHN N. CAMPBELL.

REVIEW OF VETERINARY MEDICAL FILMS

Cell Division and Growth.—Sound, 16 mm., black and white; running time about fifteen minutes. Presented by, and available from, Abbott Laboratories, North Chicago, Ill. Produced with the coöperation of the Department of Pathology, Northwestern University, Chicago, Ill.

Through time-lapse photography and microphotography this film shows phenomena which have been accepted by pathologists and physiologists without actually seeing them occur. A tissue biopsy is made and time-lapse microphotography is used to record on film the activities, division, and growth of tissue cells. The photography is done in such a way that what the viewer sees in five minutes actually occurred in twenty-four hours. The protoplasmic movements, division of nuclei, and other cell changes are clearly visible. The phase contrast microscope is also used to contribute to the over-all effect.

The film also depicts the complexity of the special equipment used for this type of cell study. It is, of course, part of the broad cancer research program that is being carried on all over the nation.

The producer is John Ott, photography is by Grant Evans, the editor is Edward Schley, and the narrator is Robert Edmonds.

THE NEWS

New Schools Approved

At the meeting of the Council on Education on May 5, 1951, action was taken on inspection reports of the new schools of veterinary medicine at the University of Minnesota, St. Paul, and Oklahoma A. & M. College, Stillwater. The council voted to approve both schools and placed them on a probationary status as is usually done with new schools at first.

This raises to 15 the number of approved veterinary medical colleges in the United States. Two more schools (at the University of California and University of Illinois) will have fourth-year classes next year and will be eligible to apply for council approval.

Technical and Scientific Laboratory Priorities of Interest to Profession

National Production Authority Order M-71 relates to priorities assistance to technical and scientific laboratories. The broad wording of the order seems to indicate that individual veterinarians as well as colleges, research institutions, and commercial laboratories can utilize this order to procure "controlled materials." The following are excerpts from the order:

> Section 1. What this order does. The purpose of this order is to provide assistance to technical and scientific laboratories in the procurement of needed supplies and materials.
>
> Section 2. Definitions. . . . (b) "Laboratory" means any person located in the United States, its territories or possessions, who carries on scientific or technological investigation, testing, or development or experimentation as his regular business or in the course of his business and who buys any materials especially for that purpose, even though he does not have a separate department or organization in his company or institution for these activities. The term "laboratory" includes, without limitation, research laboratories, . . . clinical laboratories. . . .
>
> c) "Material" means any commodity, equipment, accessory, part, assembly, or product of any kind. The term includes . . . operating supplies for laboratories, equipment and instruments designed for use in laboratories, and other materials needed to carry on scientific or technological investigation, testing or development or experimentation.

Occupational Health of Medical Personnel Discussed at A. M. A. Meeting

A symposium on this subject in the Section on Preventive and Industrial Medicine and Public Health at the one-hundredth annual session of the Ameriacn Medical Association at Atlantic City, June 11 to 15, 1951, included Dr. R. C. Klussendorf (COR '31) and a dentist along with four physic'ans.

Doctor Klussendorf pointed out that "the veterinarian serves admirably as a host to those diseases which man may acquire from his animals—for these are the occupational diseases of his profession." He also said that "contact with animals is an effective mode of transmission of brucellosis, as shown by the high incidence among persons who work with animals at the time of parturition, or with the carcasses of animals."

Dr. F. J. Orland, University of Chicago, listed three groups of occupational hazards to which dentists are exposed: physical strain on certain body parts, physical and chemical injuries, and infectious diseases.

Drs. S. E. Sulkin and R. M. Pike, University of Texas, Dallas, reviewed the laboratory-acquired infections. Dr. H. D. Lees, University of Pennsylvania, recorded a great improvement in control of tuberculosis among medical students and nurses as a result of keeping students from attending autopsies and handling pathologic tissues of tuberculous subjects. Of interest to veterinarians is the following statement: "The early experimental work in cattle, confirmed quite recently by Medlar (*J.Am.M.A., 141,* 1949:593) indicates that BCG-vaccinated animals are no more resistant to later infection with virulent tubercle bacilli than are the unvaccinated."

Dr. E. Epstein, Oakland, Calif., in discussing professional dermatoses in physicians, said that probably the most common cause of trouble of this nature is "scrubbing for surgery." Dr. M. Brucer, Oak Ridge, Tenn., told his audience that the major hazards on radioisotopes arise after the material has been injected into the patient. Protective steps to guard hospital personnel and visitors are more important at this stage than during injection, because of the potentially longer exposure over a greater area.

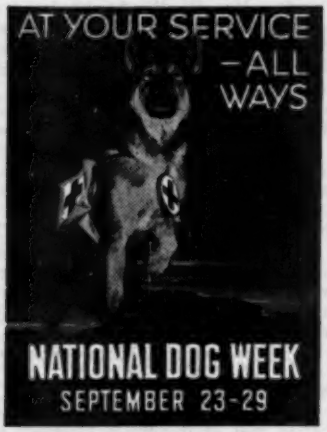
National Dog Week

The National Dog Welfare Guild's first annual "canine cavalcade" dinner, to be held in New York's Savoy-Plaza Hotel on Monday, Sept. 24, 1951, will usher in the twenty-fourth consecutive observance of National Dog Week (Sept. 23-29) sponsored by the Guild.

Louis Bromfield, Pulitzer prize winner, and

Gladys Taber, author of "Diary of Domesticity," popular column in the *Ladies Home Journal*, will be guest speakers, and Ezio Pinza, general chairman of National Dog Week for 1951, and a Dalmatian devotee, will lend his magnificent baritone to the occasion.

New York City's observance will center



The 1951 poster for National Dog Week features Rin Tin Tin III.

around a two-hour program in the Lower Plaza of Rockefeller Center the afternoon of September 27, and will feature National Dog Week's 1951 theme "At your service—all ways." It will open with a demonstration of skills of veteran, seeing-eye, and police-trained dogs and close with a colorful pageantry of blue-ribboned champions.

In scores of communities, the celebration will have the participation of youth leaders, of the Boy Scouts, Girl Scouts, Camp Fire Girls, Boys' Clubs of America, and National Recreation Association.

Members of this year's Advisory Committee include: Louise Branch, vice-president of the American Humane Association; Dale Carnegie, psychologist and author; Dr. J. Raymond Currey, president of the American Animal Hospital Association; Gabriel Heatter, noted radio commentator; John C. Neff, executive vice-president of the American Kennel Club; the Honorable John Phillips, member of Congress; and Dr. John R. Wells, president of the AVMA.

STUDENT CHAPTER ACTIVITIES

New York Chapter.—The following speakers appeared on the programs of the New York State Veterinary College Student Chapter of the AVMA during the 1950-1951 school year: **Dr. John Murray**, Painted Post, N.Y.; **Prof. Loren C. Petry**, Botany College, School of Agriculture; **Dr. R. C. Klussendorf**, then editor of the AVMA Journal; **Mr. John Halpien**, Near East Foundation; **Drs. D. H. Udall**, professor emeritus of the veterinary college; **C. E. DeCamp**, Allied Laboratories, New York City; **L. A. Corwin**, New York State Board of Veterinary Examiners; and **Prof. George Trimberger**, Department of Animal Husbandry, College of Agriculture, Cornell University.

Howard A. Bo, senior, was the winner of the Chapter award. A new practice instituted this year was the awarding of D.V.M. plaques for their cars to the seniors who had attended the required number of meetings of the Chapter. This year's winners were John Baker, George Christensen, and Kenneth Kronman.

s/LOUIS SHOR, *Secretary.*

WOMEN'S AUXILIARY

California Auxiliary.—The Women's Auxiliary to the California State Veterinary Medical Association held its annual meeting at the Mar Monte Hotel in Santa Barbara on June 25-27, 1951, with 69 in attendance. The program included a card party with door prizes, association luncheon, banquet, and a tour of the Hope Ranch gardens. New officers of the Auxiliary are Mrs. H. I. Ott, Norwalk, president; Mrs. T. J. Hage, Davis, vice-president; Mrs. Charles D. Stafford, Navato, secretary-treasurer; Mrs. Ralph H. Scofield, Arcadia, member-at-large; and Mrs. E. V. Edmonds, Oakland, junior past-president.

s/(MRS. T. J.) DORIS V. HAGE, *Retiring Secretary.*

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Georgia Auxiliary.—The third annual meeting of the Women's Auxiliary to the Georgia Veterinary Medical Association was held at the Biltmore Hotel, Atlanta, on June 19, 1951, with 33 members in attendance. A gift of $25 was made to the library fund of the School of Veterinary Medicine, University of Georgia, Athens. Mrs. Dennis Coughlin, Mrs. C. E. Bild, and Mrs. Charles Rife of the national Auxiliary, gave interesting reports to the meeting. Mrs. J. E. Scatterday, chairman of the Nominating Committee, also gave a brief report.

Newly elected officers are: Mrs. Charles P. Hill, Newman, president; Mrs. Roland Clanton, Thomasville, vice-president; Mrs. Ernest Rackley, Macon, treasurer; and Mrs. W. D. Martin, Jr., Albany, secretary.

s/MRS. W. L. SIPPEL, *President.*

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Michiana Auxiliary.—The Women's Auxiliary to the Michiana Veterinary Medical Association met at the LaSalle Hotel, South Bend, Ind., June 14, 1951, with 21 members

and two guests in attendance. President Mrs. J. J. Fishler conducted the business meeting, and plans were made for the family picnic held July 29 at Fish Lake, Ind. Mrs. Joan Baer, formerly of England, told of her return to her native country after five years in the United States.

s/(MRS. D. L.) HELEN W. MILLER, *Secretary.*

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North Carolina Auxiliary.—The annual meeting of the Women's Auxiliary to the North Carolina Veterinary Medical Association was held June 8-9, 1951, at Hendersonville. A luncheon, followed by the business meeting, was held at Echo Inn. Several new members were welcomed into the Auxiliary. Mrs. Dennis Coughlin, president of the Auxiliary to the AVMA, was guest speaker. Mrs. C. E. Bild, president-elect of the national Auxiliary, was also present. New officers are: Mrs. W. D. Collins, Winston Salem, president; Mrs. E. F. Boyette, Smithfield, vice-president; and Mrs. T. S. Williams, Shelby, secretary-treasurer.

s/MRS. C. E. BILD, *President-Elect of the Auxiliary to the AVMA.*

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North Dakota Auxiliary.—At the annual meeting of the Women's Auxiliary to the North Dakota Veterinary Medical Association in Valley City on June 10-12, 1951, the following officers were elected: Mrs. C. H. Hofstrand, Leeds, president; Mrs. J. F. Hinz, Lidgerwood, vice-president; Mrs. H. W. Kinne, Jamestown, secretary-treasurer. Mrs. F. M. Bolin, Fargo, was elected delegate to the meeting in Milwaukee and Mrs. G. S. Calderwood, Enderlin, was elected alternate.

The organization sponsored a library project to place books of veterinary medical interest in public libraries.

s/MRS. H. W. KINNE, *Secretary.*

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South Carolina Auxiliary.—The Auxiliary to the South Carolina Veterinary Medical Association held its summer meeting at the Clemson House in Clemson on June 10-12, 1951. After the business meeting, Mrs. Dennis Coughlin, president of the Auxiliary to the AVMA, discussed several phases of the national Auxiliary. A note from Dean Sugg of the School of Veterinary Medicine at Alabama Polytechnic Institute, thanking the Auxiliary for the check to be used for the library, was read. Mrs. V. H. Miller, past-president of the Auxiliary to the AVMA, and Mrs. C. E. Bild, president-elect, were guests. Officers are: Mrs. F. P. Caughman, Jr., Columbia, president; Mrs. Lee Rodgers, Greenwood, vice-president; Mrs. R. L. Willis, Charleston, secretary; Mrs. W. F. Rawlinson, Manning, treasurer; and Mrs. G. J. Lawhon, Sr., Hartsville, historian.

s/MRS. C. E. BILD.

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Texas Auxiliary.—During the fourth annual Texas conference for veterinarians at the Texas A. & M. College, College Station, June 7-8, 1951, 24 new members joined the Women's Auxiliary to the Texas Veterinary Medical Association, bringing the total state membership to 182. More than 100 women attended the meeting, including representatives from New Mexico, Arkansas, Oklahoma, Louisiana, and Florida. Mrs. W. W. Armisted and wives of the veterinary faculty arranged an outstanding educational and social program which included a tour of the library and the veterinary hospital, a coke party, and a banquet.

Mrs. Jack O. Whitehead, president, welcomed the guests and five regional reports were presented. The delegate and alternate were elected to serve at the national auxiliary meeting in Milwaukee. A sum of $75 was voted for the purchase of a dictionary stand for the veterinary student library at Texas A. & M. College. Mrs. Harold C. Redmon, sponsor of the Texas A. & M. Auxiliary to the Student Chapter of the AVMA, reported for the membership which included 120 wives of the veterinary students.

s/MRS. CHAS. W. FOLSE, *Secretary.*

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Vermont Auxiliary.—The Women's Auxiliary to the Vermont Veterinary Medical Association met at the Basin Harbor Club in Vergennes on June 22, 1951, with 16 members and three guests present. Following a business meeting, Mrs. A. E. Coombs, Skowhegan, Maine, recorder for the House of Representatives of the Women's Auxiliary to the AVMA, extended greetings from the national auxiliary, and Mrs. V. L. Tharp, president of the Ohio auxiliary also spoke briefly on the activities of her group. Mrs. E. K. Treat was appointed delegate to the Auxiliary House of Representatives for the Milwaukee meeting.

Social activities included a barbecue and a boat ride on Lake Champlain.

s/BARBARA G. BOLTON, *Secretary.*

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Wisconsin Auxiliary.—The Women's Auxiliary to the Wisconsin Veterinary Medical Association held its annual election of officers at a dinner meeting at the Avalon Hotel in Waukesha on June 21, 1951. The new officers are: Mrs. Claude H. Reading, Madison, president; Mrs. Rolland O. Anderson, Elkhorn, first vice-president; Mrs. Milton C. Klofanda, Milwaukee, second vice-president; and Mrs. Dale K. Sorenson, Madison, secretary-treasurer.

This meeting was held in conjunction with the regular monthly meeting of the Southeastern Wisconsin Veterinary Medical Association. Other guests were members of the Milwaukee County Veterinary Medical Association and its women's auxiliary, and members of the Rock Valley Veterinary Medical Association and their wives.

s/(MRS. D. K.) BETTY SORENSEN, *Secretary.*

U. S. GOVERNMENT

Veterinary Personnel Changes.—The following changes in the force of veterinarians in the U. S. Bureau of Animal Industry are reported as of July 6, 1951.

NEW APPOINTMENTS

Barry W. Allen, Fort Worth, Texas.
Richard S. Archer, Boston, Mass.
Roger W. Baker, Jacksonville, Fla.
William E. Beavers, Columbus, Ohio.
Harry B. Bonalio, Helena, Mont.
Charles H. Bregman, Bismarck, N. Dak.
James O. Briggs, Jacksonville, Fla.
Thomas H. Calvin, Mexico City, Mex.
Thaddaeus Captain, Omaha, Neb.
Eugene A. Costello, Louisville, Ky.
William B. Coughlan, Baltimore, Md.
King S. Daniels, Waterloo, Iowa.
James O. DeFoe, Mexico City, Mex.
Charles L. Dents, Mexico City, Mex.
Donald E. Ellwanger, Mexico City, Mex.
Lawrence E. Evans, Kansas City, Kan.
Floyd W. Frank, Pullman, Wash.
James Gandy, Oklahoma City, Okla.
Solomon C. Gartman, Phoenix, Ariz.
Angus W. Gaskin, Mexico City, Mex.
Ross W. Gerding, Columbia, S. Car.
James R. Goler, Mexico City, Mex.
Daniel P. Griswold, Mexico City, Mex.
Harold F. Groves, Columbus, Ohio.
Ralph Hamilton, Jackson, Miss.
Billy Hancock, Fort Dodge, Iowa.
Bradford A. Hyatt, Buffalo, N. Y.
Emilian Juchnowicz, Pittsburgh, Pa.
Ralph V. Kelling, Denver, Colo.
Oren L. Kelsen, Jr., Kansas City, Kan.
Joseph V. McAlpin, Columbus, Ohio.
Marion T. Manley, Jackson, Miss.
Andrew W. Monlux, Washington, D.C.
Raymond S. Moyer, Allentown, Pa.
Thomas M. Numley, Albuquerque, N. M.
Dale D. Oshel, Kansas City, Kan.
William M. Parham, Jr., Mexico City, Mex.
Elmer Pierce, Jacksonville, Fla.
Robert J. Price, Columbus, Ohio.
Michael F. Quinlan, Des Moines, Iowa.
Laurie D. Ramsay, Mexico City, Mex.
Warren Rednor, Newark, N. J.
John A. Roberts, Sacramento, Calif.
Henry J. Ruebke, St. Paul, Minn.
Clyde Slay, Jr., Jacksonville, Fla.
Kazimieriz Soltowski, St. Paul, Minn.
John B. Watkins, Bismarck, N. Dak.
Oscar E. Watson, Indianapolis, Ind.
James E. Williams, Washington, D.C.
Albert D. Wright, Montpelier, Vt.

CANCELLATIONS

Eugene A. Costello, Louisville, Ky.
Alden T. Eash, Baltimore, Md.
James Gandy, Oklahoma City, Okla.
Ralph Hamilton, Jackson, Miss.

TERMINATIONS

Ostap Dutkewycz, Chicago, Ill.

RESIGNATIONS

Richard E. Baer, Columbus, Ohio.
Allen V. Brunke, Lincoln, Neb.
James C. Conway, Indianapolis, Ind.
Ervin A. Eichhorn, Mexico City, Mex.
Robert B. Gafford, Atlanta, Ga.
John R. Gorham, Pullman, Wash.
Leonard J. Hill, Montgomery, Ala.
David M. Hopkins, Jacksonville, Fla.
Richard M. Lasday, National Stockyards, Ill.
Harold C. McCorkle, St. Louis, Mo.
Arthur A. Rohrer, Los Angeles, Calif.
Howard G. Senter, Lansing, Mich.
Hubert L. Smith, Kansas City, Kan.
Lowell L. Spruiell, Mexico City, Mex.
Lytle A. Stoe, West Fargo, N. Dak.
William H. Townsend, Olympia, Wash.
Robert G. Tumlinson, Mexico City, Mex.
John W. Upchurch, Baton Rouge, La.
Willard S. Young, Harrisburg, Pa.

RETIREMENTS

John S. Bengston, Chicago, Ill.
Frank W. Dennie, Milwaukee, Wis.
James E. Griffin, South St. Paul, Minn.
Bradford A. Hyatt, Buffalo, N. Y.
Frederick G. Kneup, Buffalo, N. Y.
Benjamin O. Moore, Los Angeles, Calif.
Julian J. Parker, Fort Worth, Texas.
Frank B. Perdue, San Francisco, Calif.
J. Guy Potter, Fort Worth, Texas.
William E. Spierling, Columbus, Ohio.

DEATHS

Emmett P. Barnhart, Providence, R. I.
James H. Murphy, Springfield, Ill.

SEPARATED (DISABILITY)

Harry H. Emerson, Chicago, Ill.

MILITARY FURLOUGH

John R. Burns, Dubuque, Iowa.
Jack E. Fox, Kansas City, Kan.
Roland J. Gibbs, Waterloo, Iowa.
LaVerne C. Harold, Kansas City, Kan.
Keith T. Maddy, Los Angeles, Calif.
Joseph S. Ruhe, Little Rock, Ark.
Rolla C. Sexauer, Boise, Idaho.

TRANSFERS

Eugene C. Aldrich, from Sioux Falls, S. Dak., to Sioux City, Iowa.
Richard E. Baer, from Mexico City, Mex., to Columbus, Ohio.
Clyde W. Baker, from St. Paul, Minn., to Indianapolis, Ind.
Jack D. Bender, from St. Louis, Mo., to Columbus, Ohio.
Samuel J. Berger, from Chicago, Ill., to Providence, R.I.
Ralph W. Boone, from Rouses Point, N. Y., to Lansing, Mich.
Louis E. Brunscher, from Topeka, Kan., to Rouses Point, N. Y.
Stokes H. Burgess, from Helena, Mont., to South St. Paul, Minn.
William O. Caplinger, from Washington, D. C., to New York, N. Y.
Hugh J. Clary, from Sioux City, Iowa, to Milwaukee, Wis.
David F. Engle, from Fort Dodge, Iowa, to Erie, Pa.
Elwood E. Everson, from Sioux Falls, S. Dak., to Chicago, Ill.
George H. Gitz, from Mason City, Iowa, to Des Moines, Iowa.
William W. Green, from Philadelphia, Pa., to Olympia, Wash.
Glen C. Harrington, from Denver, Colo., to Miami, Okla.
Edward D. Leiby, from Cheyenne, Wyo., to Harrisburg, Pa.
Walter D. McCormack, from Washington, D. C., to Augusta, Ga.
David O. Manley, from Topeka, Kan., to Cheyenne, Wyo.
Lloyd A. Marshall, from Cheyenne, Wyo., to Boise, Idaho.
Edward A. Murphy, from New York, N. Y., to Chicago, Ill.
Richard E. Omohundro, from Mexico City, Mex., to Atlanta, Ga.
Edward Roukema, from Atlanta, Ga., to Nashville, Tenn.
Sidney R. Rucker, from Providence, R. I., to Philadelphia, Pa.

Robert D. Schupbach, from South St. Joseph, Mo., to Washington, D. C.
Martin L. Tuttle, from Columbus, Ohio, to St. Louis, Mo.
John M. Wineinger, from Omaha, Neb., to Fort Dodge, Iowa.
Joseph S. Wolfram, from St. Louis, Mo., to Danville, Ill.

APPLICATIONS

The listing of applicants conforms to the requirements of the Administrative By-Laws—Article X.

First Listing

BARTON, ROBERT A.
1122 State Office Bldg., Richmond, Va.
V.M.D., University of Pennsylvania, 1941.
Voucher: Harry K. Royer.

BLUM, CLAYTON I.
Box 504, Fredericksburg, Va.
V.M.D., University of Pennsylvania, 1943.
Voucher: W. L. Bendix.

BOWERS, BERLIN B.,
Timberville, Va.
D.V.M., U. S. College of Veterinary Surgeons, 1910.
Voucher: W. A. Bendix.

BURLEY, D. R.
6417 Eastern Ave., Baltimore 24, Md.
D.V.M., Ontario Veterinary College, 1938.
Voucher: Chas. C. Rife.

DAY, JOSEPH E.
628 S. Main St., Viroqua, Wis.
D.V.M., Ontario Veterinary College, 1948.
Voucher: B. A. Beach.

DEAN, BEN H.
209 Carmel Ave., Piedmont, Calif.
D.V.M., Kansas State College, 1932.
Voucher: Charles S. Travers.

DEHNER, LORIS A.
Rt. 4, Box 94, Kent, Wash.
D.V.M., Kansas State College, 1936.
Voucher: J. L. Ellis.

DONETH, HAROLD F.
Mt. Pleasant, Mich.
D.V.M., Michigan State College, 1946.
Voucher: Glen W. Reed.

EVANS, EDWARD B.
Prairie View State College, Prairie View, Texas.
D.V.M., Iowa State College, 1918.
Voucher: E. A. Grist.

GIBBS, ROBERT E.
13313 Ardennes Ave., Rockville, Md.
V.M.D., University of Pennsylvania, 1944.
Voucher: J. D. Gadd.

GITZ, GEORGE H., SR.
1136 W. State St., Mason City, Iowa.
D.V.M., Kansas City Veterinary College, 1915.
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V.M.D., University of Pennsylvania, 1916.
Voucher: Raymond C. Snyder.

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D.V.M., University of Georgia, 1950.
Voucher: Chas. C. Rife.

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Voucher: A. Chambers.

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D.V.S., Grand Rapids Veterinary College, 1910.
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D.V.M., Colorado State College, 1942.
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WORTHINGTON, WILLIAM E., Elm St., Nicholasville, Ky.

1951 Graduate Applicants

The following are graduates who have recently received their veterinary degree and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of junior chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

First Listing

Alabama Polytechnic Institute*

BRADSHAW, GEORGE S., D.V.M.
Box 33, Dublin, Ga.
Vouchers: Dean S. Folse and W. S. Bailey.
(All the graduates except Dr. Bradshaw were listed in the August JOURNAL.)

Colorado A. & M. College

DAVIDSON, J. EDWARD, D.V.M.
204 West Tenth St., Schuyler, Neb.
Vouchers: Floyd Cross and Lynn A. Griner.
DENNIS, DANIEL S., D.V.M.
Rt. 2, Myton, Utah.
Vouchers: L. K. Wayt and D. D. Delahanty.
GREENE, EARL L., JR., D.V.M.
Box 89, Kingman, Kan.
Vouchers: J. Farquharson and Geo. R. Watson.
HARDMAN, KENNETH W., D.V.M.
Derby, Colo.
Vouchers: L. K. Wayt and Frank K. Bracken.
SIMONS, JOHN C., D.V.M.
Box 110, Torrington, Wyo.
Vouchers: I. M. Watts and George N. Glover.

University of Georgia

ROBISON, ROBERT W., D.V.M.
Box 535, Mooresville, N. Car.
Vouchers: W. A. MacKenzie and John T. Mercer.

Iowa State College

ANDERSON, WILLIAM LEE, D.V.M.
Box 3, Blockton, Iowa.
Vouchers: E. A. Benbrook and I. A. Merchant.
BREGMAN, CHARLES H., D.V.M.
Box 224, Cascade, Iowa.
Vouchers: C. H. Covault and I. A. Merchant.
BRINKMEYER, DALE L., D.V.M.
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Vouchers: F. K. Ramsey and Geo. R. Fowler.
BUCHANAN, DON A., D.V.M.
3033 Ansborough, Waterloo, Iowa.
Vouchers: E. A. Benbrook and I. A. Merchant.
COOK, WALTER W., D.V.M.
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CULLEN, A. RAYMOND, D.V.M.
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Vouchers: I. A. Merchant and E. A. Benbrook.
HOLST, RICHARD B., D.V.M.
Williams, Iowa.
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Woodbine, Iowa.
Vouchers: I. A. Merchant and E. A. Hewitt.
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Vouchers: I. A. Merchant and F. K. Ramsey.
WUNDER, ROBERT D., D.V.M.
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Vouchers: I. A. Merchant and Stanton Williamson.
YOUNG, FRANK W., D.V.M.
Waukee, Iowa.
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BOOZER, WILLIAM T., D.V.M., Rt. 2, Jacksonville, Ala.

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CROCKER, UNCAS T., D.V.M., c/o O. L. Crocker, Trenton, Fla.

CRYAR, W. ROSS, D.V.M., 213 North 15th St., Birmingham, Ala.

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GAIL, THEODORE L., D.V.M., Fairhope, Ala.

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GATES, JOHN R., D.V.M., Helena, Ala.

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HUNTER, WILLIAM K., D.V.M., Tallahassee, Ala.

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OTTO, CHARLES S., JR., D.V.M., Dadeville, Ala.

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PUCKETT, LEWIS W., D.V.M., Canton, Miss.

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Top row (left to right)—R. W. Gustafson, D. S. Dennis, L. D. Ramsay, D. F. Rigo, E. L. Drake, G. W. Meyers, G. W. Hicks, W. B. Allen, M. B. Matulich, E. L. Greene, Jr., B. L. Swift.

Second row—R. A. Simmons, A. W. Stichka, K. R. Burritt, W. L. Adrian, R. G. Scott, C. D. Clark, G. F. Azlein, J. L. MacKinnon.

Third row—E. L. Payne, J. A. Marron, C. A. Brunner, M. P. Doran, V. E. Johnson, A. W. Clark, D. R. Mason, B. E. Ross.

Fourth row—B. N. Horstman, J. H. Wenig, B. G. Smiley, J. E. Sharkey, H. C. Burns, K. W. Hardman, C. H. Porter, D. Rone.

Fifth row—J. F. Alberson, R. E. Brandt, A. W. Eivers, G. N. Stafford, J. G. Boetger, D. D. Tracy, R. G. Smith, J. C. Simons, R. W. Harber, G. D. Orrell, F. S. Scott.

Sixth row—M. L. Vondy, L. J. Avenson, E. L. Prouse, C. E. Bunn, G. J. Shiner, M. A. Funk, R. J. Miser, F. Buddingh, P. C. Lambert, J. E. Davidson.

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GEIB, DONALD ALLEN, V.M.D., Rexmont, Pa.
GREENDYK, WILLIAM CHARLES, V.M.D., Heathcote Rd., Kingston, N.J.
HEPNER, CHARLES M., V.M.D., Rt. 3, Elizabeth, Pa.
HOWER, CARLTON R., V.M.D., 217 Messenger St., Johnstown, Pa.
HUFF, CARL P., V.M.D., 5 Harrison St., Sussex, N.J.
JAQUISH, JOSEPH P., V.M.D., Punxsutawney, Pa.
KAPLAN, ARNON, V.M.D., 5552 Osage Ave., Philadelphia 43, Pa.
KERNICK, WILLIAM A., V.M.D., 10755 Frankstown Rd., Pittsburgh 35, Pa.
LEVENSON, JACOB, V.M.D., Bishopville, S. Car.
LEWENSON, MAURICE, V.M.D., 412 Olive St., Scranton, Pa.

LINE, GEORGE A., V.M.D., 24 Mooreland Ave., Carlisle, Pa.
LOWE, LABAN ROBERT, V.M.D., High Street Extension, Chestertown, Md.
LUCAS, FRANCIS R., V.M.D., 918 "C" St., Sunset Heights, Harrisonburg, Va.
MCKINLEY, RAYMOND E., V.M.D., 215 E. Irvin St., State College, Pa.
MARTIN, EUGENE A., V.M.D., Luray, Va.
MOUNTAN, A. WAYNE, V.M.D., Rt. 3, Box 220, Latrobe, Pa.
NEIBERT, HAROLD C., V.M.D., 120 W. 3rd St., Waynesboro, Pa.
NICHOLS, HAROLD E., V.M.D., Erie St., Edinboro, Pa.
OPPENLAUDER, G. FREDERICK, V.M.D., Paoli, Pa.
PECK, DONALD E., V.M.D., 217 Messenger St., Johnstown, Pa.
SNOKE, PAUL C., V.M.D., 185 E. Katherine Ave., Washington, Pa.
STEWART, JOHN BOYD, V.M.D., 47 Del Terrace, Meriden, Conn.
STRICKLER, JOHN J., V.M.D., Rt. 1, Chambersburg, Pa.
TUDOR, DAVID C., V.M.D., P.O. Box 296, Cranbury, N.J.
UMBLE, CALVIN B., V.M.D., Honey Brook, Pa.
WAGNER, ALBERT L., JR., V.M.D., Buckingham, Bucks County, Pa.
WHITAKER, JACK O., V.M.D., c/o N. A. Melton, Rt. 2, Hendersonville, N. Car.
WOLFE, FRED J., V.M.D., 1002 Landis Ave., Vineland, N.Y.
WRIGHT, JAMES F., V.M.D., 44 N. Haviland Ave., Audubon, N.J.

Ecole de Médecine Vétérinaire de la Province de Québec

FANIEL, GUSTAVE, D.M.V., Magog, Stanstead County, P.Q.
LAPIERRE, NOEL, D.M.V., 20 St. Charles, Thetford Mines, P.Q.

Texas A. & M. College

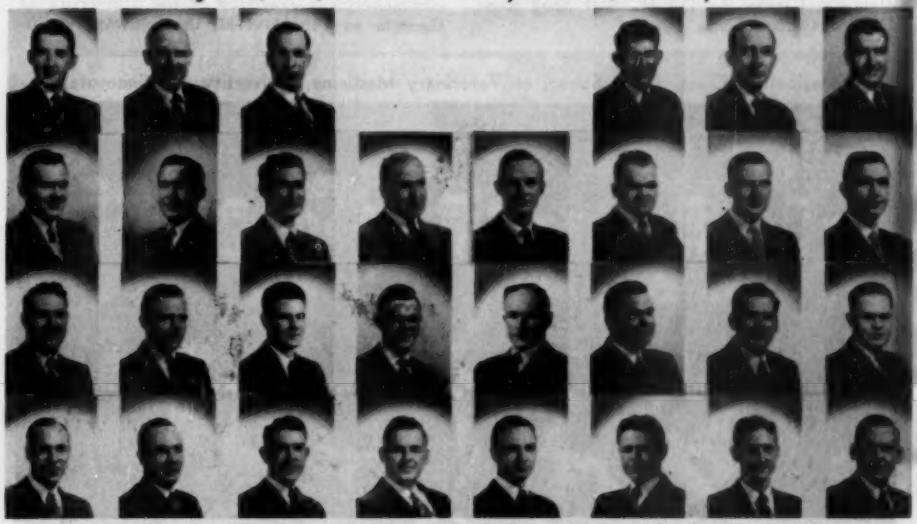
AIKEN, CHARLES H., D.V.M., 1608 W. Ave. H., Temple, Texas.
ALEXANDER, W. E., D.V.M., 704 N. Alexander Dr., Baytown, Texas.
ALLEN, BARRY WILBURN, D.V.M., Rt. 1, Rotan, Texas.
ARTECONA, G. L., D.V.M., Box 713, College Station, Texas.
BAKER, J. M., D.V.M., 1104 Dougherty Ave., Mission, Texas.
BAKER, ROGER W., D.V.M., 521 E. Sixth St., Irving, Texas.
BATES, JACK R., D.V.M., Box 213, Irving, Texas.
BLACKBURN, FLOYD H., D.V.M., Rt. 1, Springtown, Texas.
BRYANT, ERNEST L., D.V.M., Bastrop, Texas.
CARDWELL, WALLACE H., D.V.M., Box 468, Elgin, Texas.
CARR, ROY EDWARD, D.V.M., Box 531, Angleton, Texas.
DAWSON, J. T., D.V.M., c/o Hill Animal Hospital, Longview, Texas.

Graduating Class, 1951, École de Médecine Vétérinaire, Université of Montréal

Top row—Drs. J. A. Nadeau, Joseph Du fresne, Gustave Labelle, Mgr. Olivier Maurault, Dr. Jacques St. Georges, Rev. Pere E. M. Boulay.
Second row—Louis-Philippe Phaneuf, Eugene Couture, Rémi Gauthier, Germain Pinard, Jean-Guy Tardif, Roch-Henri Comtois, René Tallefer, and Noel Lapierre.
Third row—Guy Cousineau, Gustave Faniel, Michel Paquette, and Julien Lavallée.

DEYHLE, CHARLES E., D.V.M., Gen. Del., Clarendon, Texas.
DORAN, HARRY G., JR., D.V.M., Box 246, San Saba, Texas.
DUWE, J. H., D.V.M., 3206 Holliday St., Wichita Falls, Texas.
FAULKENBERRY, TIM G., D.V.M., Box 1189, Brownfield, Texas.
FENNER, ROY, D.V.M., Port Lavaca, Texas.
FOX, CHARLES J., D.V.M., Box 235A, Rt. 7, Waco, Texas.
GALBREAITH, JOHN D., D.V.M., 2321 Aster St., Fort Worth 11, Texas.
GANDY, JAMES, D.V.M., Rt. 3, Cameron, Texas.
GAULT, LANDON L., D.V.M., New Braunfels, Texas.
HALL, HAROLD FRANCIS, D.V.M., 2701 Hanna, Fort Worth 6, Texas.
HANCOCK, BILLY B., D.V.M., Box 576, Dublin, Texas.
HARKINS, MAXIE C., D.V.M., Box 5805, Camden, Ark.
HUNGER, ROBERT, JR., D.V.M., Junction, Texas.
JONES, ROBERT E., D.V.M., Childress, Texas.
JOY, J. B., D.V.M., Box 6, Doole, Texas.
KING, ROBERT E., D.V.M., 1101 Texas Ave., Texas City, Texas.
KIRK, JACK F., D.V.M., 410 North Dal Paso, Hobbs, N.M.
KNAPP, BILLY J., D.V.M., 513 Elm St., Sweetwater, Texas.
LAMP, JAMES H., D.V.M., Box 141, Bellville, Texas.
LANDRUM, PAUL W., JR., D.V.M., 2635 N.W. 36th St., Miami 37, Fla.
McDERMITH, DONALD J., D.V.M., Nokomis, Ill.
McDONALD, ROBERT L., D.V.M., 4304 Wendell, Bellaire, Texas.
McMURRY, EDGAR D., D.V.M., Box 5407, College Station, Texas.
McMURRY, T. S., JR., D.V.M., 622 Cordova, Dallas, Texas.
MARKHAM, JOE L., D.V.M., Canyon, Texas.
MARX, MARTIN B., D.V.M., Box 143, Cynthiana, Ky.
MATTHEWS, THOMAS WALLACE, D.V.M., 719 Lamar St., Luling, Texas.
MURRAY, WILLIAM L., D.V.M., Springdale, Ark.
NUNLEY, THOMAS MARK, D.V.M., Rt. 2, Box 508, Eagle Pass, Texas.
PARKER, BILL, D.V.M., Gen. Del., Farmersville, Texas.
PERRY, ROYAL H., D.V.M., 7710 Brumblay, Houston 12, Texas.

Graduating Class, 1951, School of Veterinary Medicine, University of Missouri



Top row—(left to right)—G. D. Andes, F. D. Bisplinghoff, S. H. Boelsen, W. E. Boucher, R. E. Brown, C. C. Clark.

Second row—M. Engle, Jr., C. Eppright, R. W. Gerding, L. F. Good, L. E. Greer, G. W. Harlan, R. W. Hughes, L. C. Jackson.

Third row—W. F. Ketchum, F. F. Krusekopf, T. L. Lane, D. F. Lucas, R. L. Lyle, R. McCrady, T. D. O'Brien, L. L. Rice.

Fourth row—N. E. Schulz, H. C. Sebolt, G. C. Stiles, M. E. Taylor, T. V. Vogelweid, C. E. Vulgamott, O. E. Watson, W. H. Wohler, Jr.

PFEIL, CLIFTON E., D.V.M., Woodsboro, Texas.
PIERCE, ELMER, D.V.M., 2225 12th St., Port Arthur, Texas.
PRATHER, CHARLES, D.V.M., Gail Rt., Box 8, Big Spring, Texas.
PRINE, JAMES R., D.V.M., Box 185, Richland, Texas.
RANGE, EDGAR BYRON, JR., D.V.M., Shamrock, Texas.
ROBERTS, BURNACE H., D.V.M., Bowie, Texas.
RYAN, THOMAS F., JR., D.V.M., Forrest City, Ark.
SAUNDERS, ROY D., JR., D.V.M., Rt. 1, Karnack, Texas.
SIMS, FRANK H., D.V.M., Stamford, Texas.
SLAY, CLYDE, D.V.M., 1500 Enderly Place, Fort Worth, Texas.
SMART, RAY F., D.V.M., 137 West Main St., Kerrville, Texas.
SMITH, WADE M., JR., D.V.M., 510 Leland, Austin 22, Texas.
STEVENS, C. R., D.V.M., Rt. 2, Athens, Texas.
STUDDARD, CHESTER W., D.V.M., Rt. 1, Bethany, La.
SWATZELL, MONTE YALE, D.V.M., Box 38 Cleburne, Texas.
WAIDHOFER, JOE JOHN, D.V.M., P.O. Box 538, College Station, Texas.
WALLACE, CALVIN A., D.V.M., 5341 Shell Road, Corpus Christi, Texas.
WILLIAMS, DONALD E., D.V.M., Box 235, Whitewright, Texas.
WILSON, EVERETT E., D.V.M., P.O. 5805, Camden, Ark.
WOMMACK, JAMES HAROLD, D.V.M., Box 224, Naples, Texas.
YEARGAN, GORDON S., JR., D.V.M., 1220 Lausanne, Dallas 8, Texas.

COMMENCEMENTS

University of Minnesota.—At the University of Minnesota commencement exercises on June 16, 1951, 23 candidates were presented for the degree of D.V.M. This was the first graduating class of the School of Veterinary Medicine, which is under the direction of Dr. W. L. Boyd. (See picture for names of candidates.)

A prize of $25, given by the Women's Auxiliary of the Minnesota State Veterinary Medical Society, was awarded to P. D. Lundgren of Minneapolis. This award to the most outstanding senior of the first graduating class, was based on scholarship, leadership, clinical aptitude, and moral character.

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University of Georgia.—At the 148th annual commencement exercises of the University of Georgia on June 4, 1951, the following candi-

Graduating Class, 1951, School of Veterinary Medicine, University of Minnesota

Back row (left to right)—W. E. Gladitsch, A. F. Alexander, K. G. Palmer, R. M. Leary, J. H. Stewart, G. H. Nelson, P. D. Lundgren, J. E. Busch.
Middle row—P. J. Cox, V. L. Dahl, W. J. Mackey, J. E. Fogarty, S. G. Jepson, L. J. Redder, W. D. Anderson, D. B. Hicks, R. G. Pyle.
Front row—R. B. Hohn, C. J. Rosell, I. A. Schipper, V. F. Olson, G. B. Brandstad, D. W. Stanley.

dates were presented for the D.V.M. degree:
Wilt A. Irvin, *cum laude*
Leicester L. Landon, *cum laude*
Lewis G. Yarboro, *cum laude*

Walter W. Adams
Murphey W. Banks
Leslie A. Barnes
James O. Briggs
Clare L. Bromley, Jr.
William L. Carter, Jr.
Simon L. Clarkson
Bobby M. Clyatt
James E. Daniels
William A. Elinburg, Jr.
Howard S. Garner
Woodrow H. Gibson
Edgar H. Gilchrist
Robert J. Glass
Charles A. Greenig, III
Wiley J. Greenway, Jr.
Leland E. Griffith
James M. Hawk
Wilbur S. Higgs
Robert R. Hirshberg
Francis T. Holton
William A. Knapp, Jr.
Earl L. Knox
Robert C. Lawrence, Jr.
Charles E. Lee
Marion T. Manley
William B. Martin, Jr.
Raymond H. Mason
Robert L. Meeks
Dank Morris
Luther P. Murphy, Jr.
William E. Pace
Waldo H. Palmer
Robert W. Robison
Ernest B. Rushing, Jr.
James R. Sandifer
Jesse S. Sloan
Leonard J. Steele
William D. Strong
Pat Suber
Carey W. Thornton, Jr.
Allen V. Tuten
Charles L. Vickers
William J. Waters
Robert D. Whiteford
A. C. Wilkinson

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Washington State College.—At the annual commencement exercises of Washington State College on June 3, 1951, the following candidates were awarded the D.V.M. degree:

Arthur J. Adams
Howard M. Adams
James W. Andresen
Howard E. Bean
Norris Boe
Harry B. Bonallo
David C. Brinkman
Herbert A. Brosz
Charles E. Childs
Dennis H. DeJong
Frank N. Dost
Donald E. Ellwanger
Malcolm E. Fishback
Neil V. Follett
Floyd W. Frank
Clarence F. Gansberg
Allen J. Goulter
Robert A. Harcus
Dwight C. Hartle
Theo A. Hymas
Harry C. Isbelle
David W. Johnson
Hyrum W. Kershaw
James W. Lewis
James R. Lucas
Donald W. Marble
Clarence G. Mason
Stanley E. McGough
Earl W. Moore
Philip R. Morgan
Thomas W. Ohlson
Marvin M. Prentice
Jack E. Priebe
Robert L. Prior
Raymond E. Reed
Wallace G. Rightmire
Douglas L. Sandberg
Arnold C. Slater
Lucas H. Sprinker
Russel V. Strandberg
Orin G. Swanson
George O. Ugstad
Donald R. Vetter
Vernon Ward

AMONG THE STATES AND PROVINCES

California

Public Health Association to Meet.—The seventy-ninth annual meeting of the American Public Health Association, the eighteenth annual meeting of its western branch, and the annual meetings of 38 related organizations will be held simultaneously in San Francisco, Oct. 29-Nov. 2, 1951. It is expected that more than 5,000 health specialists from all parts of the Western Hemisphere will attend. Among the related organizations meeting at this time are the Public Health Veterinarians and Commissioned Officers Association of the U. S. Public Health Service.

S/REGINALD M. ATWATER, *Executive Secretary.*

Connecticut

State Association.—On May 2, 1951, 40 members of the Connecticut Veterinary Medical Association met at the University of Connecticut at Storrs to hear **Dr. Asa Winter,** U. S. BAI, Washington, D.C., discuss the role of the veterinarian in civilian defense. Following the meeting, a tour was made of the University. The meeting was in charge of Dr. Lincoln Easterbrooks, extension veterinarian at the University.

S/NIEL W. PIEPER, *Resident Secretary.*

District of Columbia

Dr. C. D. Lowe Retires.—Dr. Clifton D. Lowe (OSU '10), extension animal husbandman in the U. S. Department of Agriculture, retired from active duty June 30. He served

Dr. Clifton D. Lowe

nearly twenty-eight years in his last position, where he fostered educational programs and activities in livestock production and disease control in coöperation with the land-grant colleges in 48 states, Hawaii, and Puerto Rico.

During the several years after he received his D.V.M. degree, Dr. Lowe served on the animal husbandry staff at Pennsylvania State College; as extension animal husbandman for the University of Tennessee; as livestock de-

velopment agent for the Southern Railway Company; as representative for the American Aberdeen Angus Breeders' Association; as state veterinarian in Tennessee, and again with the Bureau of Animal Industry in cattle tick eradication in South Carolina, Georgia, and Arkansas, and in foot-and-mouth disease eradication in New Jersey.

Dr. Lowe has served in many special capacities and was a member and former chairman of the AVMA Public Relations Committee and a member of National Brucellosis Committee. Following retirement, he will continue to make his home at 3429 Oakwood Terrace, N. W., Washington, D. C.

Georgia

State Association.—The Hotel Biltmore in Atlanta was the scene of the forty-fifth annual meeting of the Georgia Veterinary Medical Association on June 17-19, 1951. The following speakers comprised the program: **Drs. W. C. Bruce,** Savannah; **B. E. Carlisle,** Camilla; **T. B. Clower,** Atlanta; **E. E. Chambers,** Rossville; **E. A. Davis,** Columbus; **C. E. DeCamp,** public relations representative, Pitman-Moore Co., New York, N. Y.; **Chas. P. Hill,** Newman; **R. A. Houston,** Blakely; **Joe Knappenberger,** Ashe Lockhart, Inc., Kansas City, Mo.; **W. J. Gibbons,** Alabama Polytechnic Institute, Auburn; the **Hon. W. B. Hartsfield,** mayor of Atlanta; the **Hon. Tom Linder,** commissioner of agriculture, Atlanta; **Drs. W. A. MacKenzie,** School of Veterinary Medicine, University of Georgia, Athens; **Paul Piercy,** School of Veterinary Medicine, University of Georgia; **L. C. Rossman,** Albany; **T. F. Sellars,** director, Georgia Department of Public Health; **J. E. Severin,** Atlanta; **Shirley Shepard,** Moultrie; **Col. J. R. Sperry,** Third Army veterinarian, Ft. McPherson, Ga.; **Drs. J. H. Steele,** U. S. Public Health Department, Atlanta; and **John R. Wells,** West Palm Beach, Fla., president-elect of the AVMA.

During the business session, a charter of incorporation was adopted.

Press and radio publicity for the meeting was excellent, emphasizing the value of the veterinary profession in food production of animal origin.

New officers of the Association are Drs. F. E. Ducey, Sr., Savannah, president; John T. Riddle, Marietta, president-elect; Chas. C. Rife, secretary-treasurer. Drs. Chas. Williams, Rome, and B. F. Mood, Savannah, were elected to the Executive Board.

s/CHAS. C. RIFE, *Resident Secretary.*

Idaho

State Association.—The annual summer meeting of the Idaho Veterinary Medical Association was held at the Shore Lodge in McCall on June 18-19, 1951. Program speakers included **Drs. L. V. Ruebel,** Jerome; **I. M. Jackson,** Twin Falls; **C. D. Van Houweling,** Chicago, assistant executive secretary of the AVMA; **Lloyd C. Moss,** Department of Medicine, Colorado A. & M. College, Fort Collins; **A. O. Foster,** U. S. BAI, Beltsville, Md.; **L. D. Thornburg,** Burley; **Floyd Cross,** dean, School of Veterinary Medicine, Colorado A. & M. College, Fort Collins; **H. F. Meyers,** Livestock Disease Control Laboratory, Boise; **W. J. Ewing,** Boise; and **Mr. Blair Armstrong,** chairman, Board of Trustees, McCall.

Officers of the Association are Drs. L. V. Ruebel, Jerome, president; W. E. Cameron, Nampa, Vice-president; and A. P. Schneider, Boise, secretary-treasurer.

s/A. P. SCHNEIDER, *Secretary.*

Illinois

Eastern Association.—The summer meeting of the Eastern Illinois Veterinary Medical Association and its auxiliary was held at the Hotel Tilden Hall in Champaign on June 13, 1951. Dinner was served to 59 members and guests.

A discussion of mobile communication units was conducted with representatives from radio and telephone companies participating. **Drs. P. B. Meerdink,** LeRoy; **A. L. Starkey,** McLean; **F. E. Bartley,** Sidell; and **A. H. Gaffin,** Clinton; presented the subject from the standpoint of the practitioner.

s/OLIVER D. GRACE, *Secretary.*

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Mrs. L. A. (Mary Smith) Merillat.—Mrs. Merillat, aged 81, wife of Dr. L. A. Merillat of the JOURNAL staff, died at her home at 453 E. 87th Place, Chicago, on July 22, 1951, after several month's illness. Mrs. Merillat was born on March 29, 1870, in Wooster, Ohio. She and Dr. Merillat attended the Wooster schools and were high school sweethearts. They were married in Wooster on March 16, 1891. Thus, "Ma" Merillat, as she was affectionately known to American veterinarians and their wives of her acquaintance, and Editor (emeritus) Merillat had enjoyed a happy marriage and companionship for over sixty years.

Mrs. Merillat was interred at the Arlington National Cemetery in Virginia on July 26 beside her son, Col. L. A. Merillat, Jr. (U.S.M.A. '15), all-American football player while at West Point, who died two years ago, and a brother of Dr. Merillat, Capt. Alfred C. Merillat (U.S.M.A. '90), of the 15th Cavalry, a casualty of the Philippine revolution.

Mrs. Merillat is survived by her husband, two grand-daughters, and a great grandson.

Indiana

Wabash Valley Association.—On June 20, the Wabash Valley Veterinary Medical Association met in the Moose Lodge on Lake Manitou, Rochester. Guest speaker was **Mr.**

Castor, superintendent of Rochester schools. Later, members discussed practice questions and the women were entertained by Mesdames Clinger and Hainbaugh.

s/J. L. KIXMILLER, *Resident Secretary.*

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Tenth District Association.—The Tenth District (Ind.) Veterinary Medical Association met in Cumberland on June 21 to hear **Dr. Frank Tucker** of Claypool discuss poultry practice. Dr. and Mrs. R. A. Showalter, Cumberland, were hosts to the group.

s/J. L. KIXMILLER, *Resident Secretary.*

• • •

Northwestern Association.—The Northwestern Indiana Veterinary Medical Association met in Fowler on June 28, 1951. **Dr. R. C. Klussendorf,** Commercial Solvents Corp., Terre Haute, spoke on the better application of available antibiotics in veterinary medicine. **Mr. S. Lawson,** Boswell, a member of the Indiana Livestock Sanitary Board, spoke on brucellosis and tuberculin testing and the need for better coöperation of veterinarians with present plans of the board.

s/J. L. KIXMILLER, *Resident Secretary.*

Kansas

Annual Conference for Veterinarians.—The thirteenth annual conference for veterinarians at Kansas State College was held June 1-2, 1951, at the College, with 175 veterinarians in attendance. Guest speakers included **Drs. J. D. Ray,** Corn State Serum Co., Omaha, Neb.; **A. H. Groth,** dean, School of Veterinary Medicine, University of Missouri, Columbia; **L. W. Tuttle,** U. S. Atomic Commission, Washington, D.C.; **H. E. Jensen,** Cleveland, Ohio; **J. S. Hughes,** Chemistry Department, Kansas State College; and **S. F. Scheidy,** Sharpe and Dohme, Glenolden, Pa.

A well-planned program brought those in attendance up-to-date information on all aspects of practice.

Kentucky

State Association.—More than 100 veterinarians attended the annual conference for veterinarians at the Seelbach Hotel in Louisville on July 11-12, 1951.

One of the outstanding features of the program was a panel discussion on diseases of animals in which the following men participated: Drs. **J. A. Winkler** (moderator), Newport; **Walter J. Gibbons,** Auburn, Ala.; **J. R. Knappenberger,** Columbus, Ohio; **Floyd C. Sager,** Paris; **LaVerne Roach,** Frankfort; **F. D. Gentry,** Springfield, Mo.; and **John Miller,** Clinton.

Other program speakers were **Drs. J. K. Bushnell,** Paris, president of the Association; **Floyd E. Hull,** Experiment Station, Lexington; and **W. M. Coffee,** LaCenter, president of the AVMA.

New officers of the Association are Drs. L. L. McBride, Shelbyville, president; L. R. Wempe, Morganfield, president-elect; E. L. Taylor, Georgetown, vice-president; and T. J. Stearns, Louisville, secretary-treasurer. Dr. L. M. Roach, Frankfort was nominated for resident state secretary for the AVMA.

s/ROSS BROWN.

s/T. J. STEARNS, *Secretary.*

Maryland

State Association.—The Maryland State Veterinary Medical Association met at the Hotel George Washington in Ocean City on June 28-29, 1951. The following speakers comprised the program: **Drs. H. L. Baker, Jr.,** Hagerstown; **A. L. Breuckner,** Hyattsville; **John C. Fowble,** Timonium; **Roy D. Hoffman,** Bedford, Pa.; **Asa Winters,** Washington, D.C.; **James Gillespie,** Cornell Research Laboratory, Ithaca, N.Y.; **R. D. Connolly,** Lima, Pa.; **C. H. Kable** Westminster; **Paul Brown,** Livestock Sanitary Laboratory, College Park; **Major W. A. Wallenstein,** Livestock Sanitary Laboratory, College Park; **Richard Sears,** Fair Hill; **R. Jenney;** and **John D. Gadd,** Cockeysville.

s/JOHN D. GADD, *Secretary.*

Massachusetts

Dr. Harvey is Rotary International Officer.—Dr. E. Erskine Harvey (MSC '27), veterinary health officer in the Division of Live Stock Disease Control for Massachusetts, is a district governor of Rotary International, world-wide service organization, for 1951-1952. As governor, he coördinates activities of the 40 Rotary Clubs in parts of Massachusetts and Connecticut which comprise the 291st Rotary District. During the year, he will visit each of these clubs to offer advice and assistance in Rotary service work and administration.

Dr. Harvey has served as state veterinary health officer for Massachusetts since 1928. He is also inspector of animals and slaughtering for Greenfield, and maintains a general practice. He is a member of the Massachusetts Veterinary Association and of the AVMA.

Michigan

State Association.—The sixty-ninth annual meeting of the Michigan State Veterinary Medical Association was held July 2-3, 1951, in East Lansing. The following speakers participated in the program: **Drs. S. F. Scheidy,** Sharp and Dohme, Inc., Glenolden, Pa.; **T. Lloyd Jones,** Ontario Veterinary College, Guelph; **L. P. Doyle,** Purdue University, West Lafayette, Ind.; **A. F. Bain,** Ontario Veterinary College, Guelph; **C. D. Van Houweling,** Chicago, assistant executive secretary of the AVMA; **W. L. Roberts,** Federal Foods, Inc., Thionsville, Wis.; **L. F. Wolterink,** Michigan State College; and **Lee Davisson** and **C. H. Hays,** Lansing.

s/R. A. RUNNELLS, *Secretary.*

Missouri

State Association.—Two-hundred veterinarians registered at the sixty-first annual summer meeting of the Missouri Veterinary Medical Association at the Hotel Robidoux in St. Joseph, June 25-26, 1951.

New officers of the Association are Drs. E. W. Millenbruck, Carthage, president; G. L. Dunlap, Kansas City, vice-president; J. L. Wells, Kansas City, secretary-treasurer. Drs. W. H. Mowder, Independence, and Paul Jungerman, Aurora, were elected to the Executive Committee.

s/J. L. WELLS, *Secretary.*

Montana

State Association.—The Montana Veterinary Medical Association met at Montana State College in Bozeman on June 21-23, 1951, with 90 in attendance.

Speakers on the program included **Drs. E. M. Baldwin,** Corn States Serum Company, Omaha, Neb.; **G. H. Conner,** State College of Washington, Pullman; **F. Cross,** dean, Division of Veterinary Medicine, Colorado A. & M. College, Fort Collins; **A. O. Foster,** Zoölogical Division, Bureau of Animal Industry, Agricultural Research Center, Beltsville, Md.; **H. Koprowski (M.D.),** Lederle Laboratories, Pearl River, N.Y.; **L. C. Moss,** Colorado A. & M. College, Fort Collins; **E. C. Stone,** State College of Washington, Pullman; and **C. D. Van Houweling,** Chicago, assistant executive secretary of the AVMA.

Resolutions were passed calling for the eradication of hog cholera and scabies in sheep, cattle, and swine in the United States. Dr. Howard Welch was honored for serving as secretary of the Montana Veterinary Board of Examiners for thirty-eight consecutive years.

New officers of the association are Drs. H. E. Furgeson, Butte, president; J. H. Newhall, Bozeman, vice-president; E. A. Tunnicliff, Bozeman, secretary-treasurer. Dr. H. W. Jacobson, Havre, retiring president, was elected to the Executive Board, and Drs. G. A. Morrison, Great Falls, and A. F. Hayes, Billings, were elected as delegate and alternate, respectively, to the AVMA House of Representatives. Drs. A. F. Hayes and Lee Seghetti, Bozeman, were nominated as members to the Board of Examiners.

s/E. A. TUNNICLIFF, *Secretary.*

Nebraska

Rabies Conference.—The Midwestern-North-central Regional Rabies Conference was held in the Paxton Hotel in Omaha, May 21-22, 1951. Program speakers included **Drs. Ernest S. Tierkel,** U. S. Public Health Service, Communicable Disease Center, Atlanta, Ga.; **Joseph P. Linduska (Ph.D.),** U. S. Fish and Wildlife Service, Washington, D.C.; **L. T. Giltner,** U. S. Bureau of Animal Industry, Washington, D.C.; and **Frank M. Lee,** South Carolina State Board of Health, Columbia. The program of the second day of the Conference consisted of panels on diagnosis and reporting, wildlife rabies, and on over-all state and local rabies control programs.

Dr. C. W. Bower, Topeka, Kan., chairman of the AVMA Special Committee on Rabies, was designated Association representative but was unable to attend.

Recommendations were made for coördinated programs for control of the disease, provision of adequate diagnostic facilities, and that technical assistance is available from the U. S. Public Health Service of the Federal Security Agency, the Fish and Wildlife Service of the Department of Interior, and the Bureau of Animal Industry of the U. S. Department of Agriculture.

New Brunswick

Maritime Associations.—The third annual joint conference of the Maritime Veterinary Associations was held at Mount Allison University, Sackville, on June 26-28, 1951. The following speakers comprised the program: **Drs. Chas. A. Mitchell,** chief, Division of Animal Pathology, Mount Allison University; **L. A. Gendreau,** president, Canadian Veterinary Medical Association, Sherbrooke, Que.; **G. C. Fisher,** provincial animal pathologist, Charlottetown, P.E.I.; **W. M. Mutrie,** district veterinarian, Woodstock, N.B.; **W. M. Smith,** Bridgewater, N.S.; **J. R. Cunningham,** president, Prince Edward Island Veterinary Association, Summerside; **C. Lawrence Blakely,** Angell Memorial Animal Hospital, Boston; **R. Gwatkin,** Animal Diseases Research Institute, Hull, Que.; **V. C. R. Walker,** University of Toronto and Connaught Medical Research Laboratories, Toronto, Ont.; **Eric F. Pallister,** Ontario Veterinary College, Guelph; **H. D. Branion,** Ontario Agricultural College, Guelph; **O. S. Nordland,** Charlottetown, P. E. I.; **D. G. Moore,** New Brunswick Veterinary Service, Fredericton; **J. E. Hendry,** president, Nova Scotia Veterinary Association, Halifax; and **T. Lloyd Jones,** acting principal, Ontario Veterinary College, Guelph.

s/J. F. FRANK, *Secretary for Committee.*

New Jersey

Dr. Bender Joins Sperry Corporation Staff.—Dr. C. B. Bender, for many years research specialist in dairy husbandry at the New Jersey Agricultural Experiment Station, Rutgers University, has resigned his position there to become director of Research in grassland farming for the Sperry Corporation of New York. For a number of years, Professor Bender carried on research on various phases of grassland ag-

riculture as it relates to animal nutrition and farm management and is one of the outstanding authorities in that field. His new position will enable him to focus his attention on this rapidly expanding work and its mechanization. He will remain as honorary professor of grassland farming on the faculty at Rutgers.

New York

Students in Veterinary Corps.—The following members of the 1951 graduating class of the New York State Veterinary College have joined the Veterinary Corps: William Abel, J. S. Baker, J. C. Davidson, R. E. Decher, C. P. DeGoosh, J. J. Dobrinsky, R. H. Drumm, C. W. Easton, Jr., D. J. Elliott, C. P. Gandal, J. R. Georgi, M. Hendricks, N. O. Isachsen, K. Kronman, B. W. Parsons, J. W. Robinson, J. S. Sickles, R. A. Smith, A. M. Underwood, J. E. Weeks, B. W. Widger.

North Carolina

State Association.—The fiftieth annual meeting of the North Carolina State Veterinary Medical Association was held at the Skyland Hotel, Hendersonville, on June 8-9, 1951. The following speakers appeared on the program: **Drs. J. R. Currey,** Washington, D.C.; **E. E. Clore,** Hoosier Mineral Feed Company, Greenwood, Ind.; **D. R. Burley,** University of Georgia, Athens; **M. H. Matthis,** Wilson; **E. F. Boyette,** Smithfield.

The following officers were elected for the ensuing year: Drs. G. R. Armistrong, Charlotte, president; J. W. McKee, Hickory, president-elect; C. L. Bell, Durham, vice-president; C. W. Young, Mocksville, secretary-treasurer. Members of the Executive Committee are Drs. N. B. Tyler, Raleigh; B. W. Dawsey, Gastonia; and W. D. Collins, Winston-Salem. Dr. J. H. Brown, Tarboro, was made honorary secretary. Dr. C. W. Young, Mocksville, was nominated as resident secretary for the AVMA.

s/J. H. BROWN, *Resident Secretary.*

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Central Association.—The Central Carolina Veterinary Medical Association met in Greensboro on July 11, 1951, with about 30 veterinarians and their wives in attendance. Dr. H. J. Rollins, North Carolina state veterinarian, talked on the role of the veterinarian in civil defense, and Dr. J. G. Herring led a round-table discussion of practice problems.

The following officers were elected: Drs. W. R. Dobbs, Albermarle, N. Car., president; C. M. Sellars, Burlington, N. Car., vice-president; Mr. E. D. Adams, Greensboro, secretary; and Dr. J. G. Herring, Thomasville, treasurer.

s/CLYDE W. YOUNG, *Secretary, State Association.*

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Amendment to Milk Regulations.—The following amendment to the North Carolina Milk Regulations was adopted by the Board of Agriculture on June 20, 1951:

Amendment to the Rules, Regulations, Definitions and Standards of the North Carolina Department of Agriculture

The State Board of Agriculture, meeting in Raleigh on June 20, 1951, amended ARTICLE 1—MILK AND MILK PRODUCTS: HANDLING AND SALE, Chapter IV, Dairy Division, by adding the following section to be inserted between sections 4-3 and 4-4:

§4-3.1. Bang's Disease—Removal of Infected Animals. From and after July 1, 1952, all animals which are infected with Brucellosis or Bang's Disease, or which are officially classified by the State Veterinarian or his authorized agents as Bang's reactors, shall be permanently removed from dairy herds producing graded fluid milk for human consumption, either raw or pasteurized."

(Adopted by the Board of Agriculture: June 20, 1951)

(Authority: G.S. 106-267, as amended 1951).

Certified as a true copy.
s/L. Y. Ballentine
Commissioner of Agriculture.
s/H. J. ROLLINS, *State Veterinarian.*

North Dakota

State Association.—The forty-sixth annual meeting of the North Dakota Veterinary Medical Association was held in the Rudolf Hotel, Valley City, on June 10-12, 1951. The following speakers appeared on the program: **Mr. W. E. Dinusson,** Fargo; **Mr. Lewis Harris,** Norden Laboratories, Lincoln, Neb.; **Drs. H. C. H. Kernkamp,** University of Minnesota, St. Paul, Minn.; **Lee Railsback,** Ellsworth, Minn.; and **Harry Ross,** Brandon, Manitoba.

Officers elected for the ensuing year were Drs. C. B. Bjornson, Bismarck, president; J. C. Jirikowic, Bottineau, first vice-president; H. W. Kinne, Jamestown, second vice-president; Geo. S. Calderwood, Enderlin, secretary-treasurer. Drs. D. A. Wire, Valley City, and C. B. Bjornson, Bismarck, were elected delegate and alternate, respectively, to the AVMA House of Representatives.

s/FREDERIK LOW, *Resident Secretary.*

Ohio

Dr. Saylor Featured in "Farm Quarterly".—Dr. S. L. Saylor (OSU '14), Canal Winchester, is "the veterinarian" in the article by that name in *The Farm Quarterly* (Summer, 1951). The author, Mr. Grant Cannon, after spending a busy day accompanying Dr. Saylor on routine calls, tells of the typical cases a veterinarian is called to treat in a day's work.

Ontario

Provincial Association and Refresher Course.

—The annual meeting of the Ontario Veterinary Association and the refresher course of the Ontario Veterinary College were held at the College in Guelph on July 11-12, 1951. Guest speakers participating in the program were **Drs. Frank G. Fielder**, New York State Veterinary College, Cornell University, Ithaca, N.Y.; **N. B. Lampied**, St. Helier, Island of Jersey; **W. Moynihan**, Health of Animals Branch, Federal Department of Agriculture; **Harold Worton**, president, Ontario Veterinary Association; **Messrs. A. D. Hales**, Guelph; and **A. A. Wellwood**, Department of Botany, Ontario Agricultural College.

Left to right—E. R. C. Earl, Harold Worton, Frank G. Fielder, and Nicholas Blampied.

The following members of the Ontario Veterinary College faculty also spoke on the program: **Drs. T. Lloyd Jones** (acting principal), **J. Archibald, C. A. V. Barker, D. A. Barnum, C. I. Chappel, W. J. R. Fowler, J. F. Glover, C. R. Hardy, J. A. Henderson, F. D. Horney, A. A. Kingscote, J. K. McGregor, R. A. McIntosh, B. J. McSherry, E. F. Pallister, C. K. H. Roe, J. D. Schroder**, and **R. D. Whiteford.**

Approximately 250 veterinarians attended the conference. Interesting visitors included Drs. E. R. C. Earl, Hamilton, Bermuda; Harold Worton, president of the Ontario Veterinary Association; Frank G. Fielder, Sydney, Australia; and Nicholas Blampied, St. Helier, Channel Islands. The last two are taking graduate work at Cornell University.

s/T. Lloyd Jones, *Resident Secretary.*

Pennsylvania

Bucks-Montgomery Association.—A round-table discussion was featured on the program of the June 13 meeting of the Bucks-Montgomery Veterinary Medical Association in the Moose Hall in Doylestown.

s/V. W. Ruth, *Secretary.*

Tennessee

Commemorative Tablet for Dr. Dorset.—A bronze tablet was unveiled in the Tennessee Agricultural Hall of Fame at the State Capitol in Nashville on June 12, 1951, in commemoration of the late Dr. Marion Dorset, a native of Maury County, for his work in discovering the virus origin of hog cholera and in developing hog cholera antiserum, for his work on tuberculin in bovine tuberculosis control, and for his contributions to control methods for pullorum disease of poultry.

Texas

Conference on Animal Disease Transmissible to Man.—Drs. K. F. Meyer, director, George William Hooper Foundation, University of California, San Francisco, and **J. H. Steele**, chief, Veterinary Public Health Services, Communicable Disease Center, Atlanta, Ga., presented outstanding papers on animal diseases transmissible to man at the Conference which was held in Austin on June 12-14, 1951. There were more than 175 in attendance, representing eight states and Hawaii. Sponsoring agencies were the Texas State Department of Health, the University of Texas, and Texas A. & M. College. Representatives from the Texas A. & M. School of Veterinary Medicine were: **Drs. I. B. Boughton, R. D. Turk, W. S. Monlux, F. P. Jaggi**, and **Hilton Smith. Dr. C. M. Patterson** represented the Texas Veterinary Extension Service, and **Dr. Kenneth S. Young** represented the Texas State Veterinary Public Health Section.

Topics discussed included rabies, encephalitis, poliomyelitis, Newcastle disease, conjunctivitis, ornithosis, histoplasmosis, coccidioidomycosis, plague, typhus, bullis fever, leptospirosis, brucellosis, and Q fever. One afternoon was devoted to a symposium on Q fever, at which time particular emphasis was placed on the work being done at the Public Health Service Q Fever Laboratory at Hondo, Calif.; Dr. Lauri Luoto, officer in charge; and the State Department of Health Q Fever Field Laboratory at Uvalde, Texas.

Attendance and participation in the conference exceeded all expectations, and plans are being made to hold it on annual basis.

s/J. V. Irons, *Director of Laboratories, Texas State Department of Health.*

Utah

State Association.—The Utah Veterinary Medical Association met in the Hotel Ben Lomond, Ogden, on June 15-16, 1951. The following speakers participated in the program: **Drs. Wayne Binns**, head, Department of Veterinary Medicine, Utah State Agricultural College, Logan; **A. O. Foster**, U. S. BAI, Beltsville, Md.; **Elmer H. Gibson**, Logan; **D. A. Greenwood (Ph.D.)**, Utah State Agriculture College; **Fred Haynie**, Richfield; **W. H. Hendricks**, Draper; **C. L. Jones**, U. S. BAI, Salt Lake City; **Floyd R. Mencimer**, Ogden; **Lloyd C. Moss**, Colorado A. & M. College, Fort Collins; **R. L. Poulson**, Tremonton; **F. James Schoen-**

feld, Ogden; **Hugh Stevens,** Lewiston; **C. D. Van Houweling,** Chicago, assistant executive secretary, AVMA; and the **Hon. W. Rulon White,** Mayor, Ogden.

New officers of the Association are Drs. E. A. Tugaw, Salt Lake City, president; R. L. Poulson, Tremonton, vice-president; Paul V. Christofferson, Pleasant Grove, secretary-treasurer. Drs. Elmer H. Gibson, Logan, and J. M. Twitchell, Provo, were elected to the Executive Board. New members admitted to the Association were Drs. R. E. Fuechsel, Claire Porter, and Ruth Osborn.

A motion was adopted to strengthen the present practice act, and a resolution was presented for an appropriation for participation in regional veterinary education.

s/P. V. CHRISTOFFERSON, *Secretary.*

Vermont

Conference for Veterinarians.—The Vermont Veterinary Medical Association and University of Vermont and State Agricultural College, Department of Animal Pathology, presented a conference for veterinarians at the Basin Harbor Club, Vergennes, on June 21-22, 1951. Approximately 90 veterinarians and guests attended from the northeastern states, and the speakers did an excellent job, in many cases providing movies and slides to accompany their talks. The program "who's who" follows. **Drs. Mark W. Allam,** University of Pennsylvania, Philadelphia; **John Canty,** state veterinarian and chief of livestock, Department of Agriculture, Montpelier; **D. A. Hopkins,** Brattleboro; **Charles Hults,** West Rutland; **C. A. Jordan,** Newport; **A. F. Ranney,** veterinarian in charge, BAI, Montpelier; **V. L. Tharp,** the Ohio State University, Columbus; **D. A. Walker,** president, Vermont Veterinary Medical Association, Morrisville; **C. T. Whitney,** Burlington; **Mr. V. A. Rice,** head, Animal Husbandry Department, University of Massachusetts, Amherst; and **Mr. S. G. Judd,** commissioner, Department of Agriculture, Montpelier.

Three new members admitted at this time were Drs. James R. Wadsworth, Department of Animal Pathology, University of Vermont, Roger Prior, and Richard Fournier, all of Burlington.

Members enjoyed a lobster barbecue the evening of June 21. s/W. D. BOLTON, *Secretary.*

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Personal.—Dr. James R. Wadsworth, formerly with the State Regional Diagnostic Laboratory at Harrisonburg, Va., has been named assistant station and extension animal pathologist of the College of Agriculture of the University of Vermont.

Wyoming

State Association.—The Wyoming Veterinary Medical Association met June 24-25, 1951, in Worland at the Washakie Hotel with 85 in attendance. The following speakers appeared on the program: **Drs. H. E. Kingman,** Wyoming Hereford Ranch, Cheyenne; **Peter E. Madsen,** Sheridan; **J. F. Ryff,** Laramie; **G. H. Good,** Cheyenne; **Hilary Koprowski (M.D.),** Lederle Laboratories, Pearl River, N.Y.; **E. C. Stone,** College of Veterinary Medicine, State College of Washington, Pullman; **Floyd Cross,** dean, Division of Veterinary Medicine, Colorado A. & M. College, Fort Collins; **C. D. Van Houweling,** Chicago, assistant executive secretary, AVMA; **Lloyd C. Moss,** Colorado A. & M. College; **A. O. Foster,** BAI, Beltsville, Md.; and **Bert Reinow,** Pinedale.

New officers of the Association are Drs. Robert E. Pierson, Saratoga, president; G. N. Glover, Torrington, vice-president; and Jo Browne, Laramie, secretary-treasurer. The following were elected to the Executive Board: Drs. H. L. Stoddard, Laramie; V. J. Humphreys, Worland; and J. B. Fuller, Torrington.

s/Jo BROWNE, *Secretary.*

FOREIGN NEWS

British West Africa

Fifth Veterinary Conference—The British West Africa Fifth Veterinary Conference, held in Vom, Nigeria, on Jan. 18-22, 1951, opened with an address by Mr. C. R. Niven, Plateau Provinces, who compared the more specialized work of British veterinarians on the individual animal with the vast herds and territories under the care of the qualified men in Africa.

Mr. W. G. Beaton, director of veterinary services for Nigeria, stressed that the shortage of protein for the people made the integration of stock and crop production essential. "In the production of livestock," concluded Mr. Beaton, "there is no clear cut division between pasture management, soil science, and animal husbandry, so that the closest coöperation between agricultural and veterinary officers is necessary."

Mr. S. Simpson of the Gold Coast reported on recent experiments with the new lapinized rinderpest vaccine. Owing to the peculiar susceptibility of many of the cattle of the Gold Coast to rinderpest, it has been necessary in the past to give these animals serum and/or vaccine in addition to the goat virus. Results of the tests with lapinized virus have been variable, but it is felt that the vaccine will be of value in combating the disease.

Mr. McLennan, quoting from a paper by Mr. Birket who was absent on leave, spoke from experience of the "gregarious place of contagious bovine pleuropneumonia in the disease hierarchy" of West Africa.

However, Mr. Calderbank drew attention to

Mr. Birket's statement that "the losses from pleuropneumonia, while severe, should not be considered as alarming as the animal losses due to starvation." In Kano, Northern Provinces, it was estimated that during May, June, and July, 1950, over 50,000 head of cattle died or were slaughtered as the result of starvation.

Mr. Gambles, acting assistant director of the veterinary research laboratories at Vom, discussed recent work on the value of serological testing of animals suspected of carrying pleuropneumonia virus. Serological tests, though too difficult to perform in the field, were of definite value in eliminating infected animals from smaller and more approachable herds. Slaughter of clinically infected or suspicious animals was still the only course open to the man in the field.

Mr. Williamson, of the Vom Veterinary School, discussed rabies. Mr. Thorne described the recent advances in rabies immunization throughout the world. It was the opinion of most of the officers that detection and slaughter of rabid animals, especially dogs, was the only feasible way, at present, of combating rabies in the bush.

Messrs. Mbaeliachi and Ndep, recent graduates of the Vom Veterinary School, discussed the attitude of the African farmer to livestock. The cattle of the Ibo are the tiny Dwarf Shorthorn, or "Muturu," the adults weighing little more than 400 lb. and the calves about 20 lb. When asked what the Ibos thought of the large zebu cattle of the Northern Provinces, the speakers replied that the northern zebu were not accepted by their people as cattle—but as wild animals!" Mr. Gates talked on the multitudinous breed-types of Nigerian cattle, showing an excellent set of photographs collected over a number of years. Opinions are still varied regarding the origin and relationship of many of the Nigerian breeds.

Messrs. Coulthard and Calderbank of Northern Provinces felt that there was much to be desired in the marketing and transporting of livestock in the present economical position. Large masses of the population can not afford meat at its present prices, while the producer often receives but one third of the price paid by the consumer. A considerable amount of work has been done by the Agricultural and Veterinary Departments in selecting and grading up of the indigenous breeds. The Agricultural Department distributes large numbers of these improved animals to local farmers. With the large nomadic herds, the problem is more difficult. The nomadic herdsman is a true lover of cattle; the greater their number in his herd—the greater is his prestige in the tribe. What he loves most of all is a "forest of waving horns." As a result, these cattle have been bred by the nomadic tribes for type, conformation, characteristics, and as safeguards against enemies, whereas the ideal market animal has been little considered.

Mr. Lindley of the Research Laboratories at Vom stated that suspected outbreaks of Newcastle disease have occurred in territories bordering on the Nigerian frontiers. Vaccines will be available shortly for trial on the more valuable flocks of imported birds. Control of the disease in the innumerable African villages would be an impossibility with present knowledge of the disease.

Dr. Goodwin discussed some of the newer drugs under development, including the phenanthridinium compounds. Mr. Unsworth, of the West African Trypanosomiasis Research laboratories at Vom dealt with the recent trials in Nigeria on the prophylactic antrycide chloride and methyl sulfate mixture. "It would appear," said Mr. Unsworth in his discussion, "that the effectiveness of antrycide prophylactic mixture in protecting cattle against infection and death from trypanosomiasis depends largely on the intensity of the trypanosome challenge to which the cattle are exposed. Where the quantum of infection is low, the inoculation of cattle at three-month intervals with antrycide prophylactic mixture will give complete protection against death and will protect 88.95 per cent of cattle against infection with trypanosomes. The small proportion of cattle in which trypanosomes do "break through" the drug, are apparently cured by subsequent inoculations. Where the quantum of infection is great, the inoculation at three-month intervals can not be relied upon to give complete protection either against infection or against death from trypanosomiasis.

The conference concluded with a warm note of appreciation to Mr. J. Morton, assistant director for Northern Provinces at Kaduna, and to Mr. Beaton, the director of veterinary services, on their retirement from the service. Mr. R. S. Marshall, the assistant director at Vom, moved a sincere vote of appreciation to the director for his long years of devotion to so many of the different branches of veterinary science in Nigeria—both in the laboratory and in the field.

During the week-end, officers and their wives enjoyed an excellent afternoon at the Race Meeting at Jos, some twenty miles from Vom and, finally, a dance and social at the Vom Club.

s/DESMOND H. HILL, *Resident Secretary.*

France

Describes Veterinary Medicine of the United States.—Dr. L. P. Thiery, who headed the veterinary mission to the United States last year which visited the AVMA office in November, 1950 (*see* Jan., 1951, JOURNAL, pp. 63-64), writes a long, well-illustrated article in the magazine

Bourgelat. He gives a comprehensive account of veterinary medicine of the United States as seen through the eyes of mission during its tour and visits to colleges, research and commercial laboratories, and hospitals, all of a highly complimentary nature.

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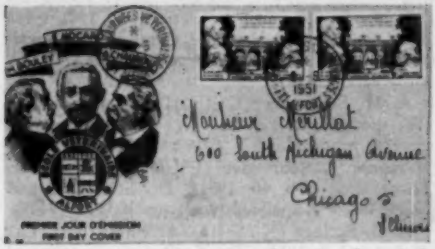
Government Honors Veterinary Medicine.—For the first time in history, a nation glorifies the veterinary profession by issuing a postage



Envelope showing postage stamp honoring the veterinary medical profession in France.

stamp in its honor. A postal card from an Alfort alumnus—M. Pierre Blaizot—and a letter from the director of the École Nationale Vétérinaire d'Alfort (*see* reproduction of the envelope) tell the story of this special stamp. The men honored are Henri-Marie Bouley (1844-1885), Jean-Baptiste-Augustin Chauveau (1824-?), and Edmond-Isidore-Etienne Nocard (1850-1902) whose names are indelibly inscribed in the veterinary story of our times.

EMERGENCY PLANNING

PERSONNEL

Mr. Charles E. Wilson, director, Office of Defense Mobilization, has announced that the Health Resources Advisory Committee of the National Security Resources Board has been transferred to his office. Mr. Wilson said "Defense mobilization is not just production and economic stabilization, but rather it is the people who make production and stabilization possible, and primarily it is the welfare of the people as a whole, and the part they are playing and must play to make America strong."

One of the major activities of the Committee since it was formed last August at the suggestion of the President has been the coördination of both federal and nonfederal health programs to insure the maximum utilization of health personnel.

It was at the Committee's suggestion that the present plan was inaugurated by the military services whereby local civilian advisory groups determine the availability for active service of reserve medical and dental officers on the basis of their essentiality to local community health services. These same local groups also serve as the advisory committees for local selective service boards on the induction of physicians, dentists, veterinarians, and allied specialists. The Committee has been responsible for making policy recommendations on:

1) Mobilization, allocation, and utilization of personnel necessary for wartime health services;
2) Environmental sanitation services;
3) Veterinary medical services;
4) Utilization of health facilities;
5) Provision of health equipment and supplies; and
6) Maintenance of essential teaching and research in health fields.

The Committee will continue these functions as advisers to Mr. Wilson and the Office of Defense Mobilization.

[This is the Committee to which Dr. J. G. Hardenbergh was appointed a consultant for veterinary medicine. See JOURNAL, June, 1951, p. 411.]—ED.

BIRTHS

Dr. (API '42) and Mrs. T. C. Deal, Burgaw, N. C., announce the birth of a daughter, Sue Ellen, on June 2, 1951.

Dr. (API '42) and Mrs. J. W. Byrd, Nashville, Ga., announce the birth of a daughter, Carolin Shae, on June 9, 1951.

Dr. (GA '50) and Mrs. Roscoe L. Drake, Reidsville, Ga., announce the birth of a daughter, Melinda Ann, on June 10, 1951.

Dr. (TEX '51) and Mrs. Harold F. Hall, 2570 N.W. Twenty-Second St., Fort Worth, Texas, announce the birth of a son, Scott, on June 11, 1951.

Dr. (COR '45) and Mrs. Joseph C. Shaffer, Ellenville, N. Y., announce the birth of a daughter, Ava Marlene, on July 4, 1951.

DEATHS

A. J. Abarr (KCV '06), Clearfield, Iowa, died in June, 1951.

Arnott A. Adamson (MCK '00), Newton, Iowa, died May 23, 1951. Dr. Adamson was a general practitioner.

Junius W. Akin (WSC '09), Orchards, Wash., died early in 1951. For many years he practiced in Canada and later was employed as a state meat inspector at Vancouver, Wash. He had retired some time ago.

Alfred W. Bett (ONT '30), Edmonton, Alta., died Sept. 16, 1950. Dr. Bett was employed by the Health of Animals Branch of the federal government.

★**C. S. Bryan** (MSC '42), 43, dean of the School of Veterinary Medicine, Michigan State College, East Lansing, died July 30, 1951. An obituary appears on page 223 of this JOURNAL. Dr. Bryan was admitted to the AVMA in 1942.

T. R. Creely (SF '07), San Francisco, Calif., died March 5, 1951. Dr. Creely was a general practitioner.

★**Colonel Horace S. Eakins** (COL '11), 64, Miami, Fla., died April 19, 1951. Colonel Eakins was an honorary member of the Colorado Veterinary Medical Association. He was admitted to the AVMA in 1928.

Frank J. Emmer (ONT '16), Lenox, Mich., died in April, 1951. Dr. Emmer had been a member of the AVMA.

★Indicates members of the AVMA.

William S. Ferrand (ISC '12), Manson, Iowa, died May 9, 1951. Dr. Ferrand was a general practitioner.

W. S. Ford, Oaktown, Ind., died April 17, 1951.

J. H. Gain (CHI '94), died early in 1951. Dr. Gain had been a member of the AVMA.

Henry V. Goode (KCV '95), Clarksville, Texas died Nov. 12, 1950.

Louis Griessman (NYA '09), Nanuet, N. Y., died Aug. 19, 1950. Dr. Griessman, a major in the Veterinary Corps, had retired some time ago.

★**Clarence M. Haring** (COR '04), 73, Berkeley, Calif., died July 10, 1951. An obituary appears on page 221 of this JOURNAL. Dr. Haring was a member of the AVMA for forty-seven years.

★**Julius Koch** (SF '10), 68, Santa Monica, Calif., died Jan. 11, 1951. Dr. Koch was born in Germany. He was a member of the AVMA for forty years.

Fred W. McCray (KCV '11), Sioux City, Iowa, died April 24, 1951. Dr. McCray had been a member of the AVMA.

H. H. Mayer (MCK '11), Humboldt, Iowa, died in May, 1951.

G. W. Mellenbruch (KCV '08), Rich Hill, Mo., died Jan. 20, 1951.

Joseph B. Munro (GWU '16), 68, Warren, R. I., died March 26, 1951. A general practitioner, Dr. Munro was a member of the Rhode Island and North East Veterinary Medical Associations. He had been a member of the AVMA.

★**James H. Murphy** (TH '15), 64, Paris, Ill., died June 13, 1951. Dr. Murphy was employed by the U. S. Bureau of Animal Industry on hog cholera control, with his official station at Paris. Dr. Murphy was admitted to the AVMA in 1918.

George L. Nicholas (UP '02), Roseburg, Ore., died (date unknown). Dr. Nicholas had been a member of the AVMA.

★**Floyd Perrin** (KCV '14), 65, Grand Island, Neb., died June 18, 1951, as the result of a heart attack. Dr. Perrin practiced in Spencer, Platte Center, and Lincoln, Neb. Twelve years ago, he joined Norden Laboratories as manager of the Grand Island Serum plant, and for the past six years was a member of the Board of Directors. He was a past-president of the Nebraska Veterinary Medical Association and of the Grand Island Cosmopolitan Club, and a member of the Grand Island Chamber of Commerce, the Executive Club, and of the AVMA.

Dr. Perrin is survived by his widow and two daughters.

★**Horace D. Pritchett** (UP '34), 49, Farmville, Ill., died July 9, 1951, after an illness of two months. Dr. Pritchett had practiced in Doylestown, Pa., and served with the BAI and Food and Drug Administration for eight years. He had operated the Farmville Veterinary Hospital since 1944. He was a member of the Virginia Veterinary Medical Association and of the AVMA. Dr. Pritchett is survived by his widow, Verna S., and a daughter.

James H. Prophitt (AVC '00), 75, Melbourne, Fla., died March 23, 1951. Dr. Prophitt had practiced in Suffield, Conn., after receiving his D.V.M. degree until he retired in 1941. He had been a member of the Connecticut Veterinary Medical Association and of the AVMA for several years.

A. H. Schmoyer (CVC '03), 74, Boyertown, Pa., died May 6, 1951. Dr. Schmoyer was a general practitioner.

August J. Schroeder (CVC '12), 62, Pharr, Texas, died Feb. 10, 1951. Dr. Schroeder had practiced in Wapello, Iowa, from 1932 to 1946.

R. G. Scriber (KCV '13), 42, Shreveport, La., died April 9, 1951. Dr. Scriber was a general practitioner. He had been a member of the AVMA.

★**Peter Simonson** (KCV '05), 75, Los Angeles, Calif., died March 2, 1951, of a heart attack. Dr. Simonson had practiced in Hooper, Neb., for many years. In 1945, he went to California and was engaged in federal poultry inspection until shortly before his death. He was a member of the AVMA.

★**J. R. Starkey** (KSC '22), 54, Goshen, N. Y., died April 2, 1951. Dr. Starkey, a general practitioner, was admitted to the AVMA in 1927.

Frank M. Tade (KCV '14), 58, Vincennes, Ind., died of a heart attack on May 13, 1951. Dr. Tade was a member of the Indiana Veterinary Medical Association. He is survived by his widow and three daughters.

★**Colonel Banks C. Talley** (OSU '15), 62, Bennettsville, S. Car., died July 11, 1951. Colonel Talley entered the Army in 1917, and served in Europe with the Second Division during World War I. He was recalled to active service in 1940 and retired in 1947. He was a former president of the South Carolina Veterinary Medical Association and a member of the AVMA for twenty-five years.

Colonel Banks is survived by his widow and a son.

C. S. Underwood, Perry, Mo., died May 10, 1951. Dr. Underwood had been a member of the AVMA.

Joseph H. Yoder (OSU '15), Louisville, Ohio, died April 28, 1951.

We regret that it was erroneously reported in the June JOURNAL, p. 426, that Dr. Alfred G. Hutton (USC '17), Lexington, Va., was deceased.

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COMING MEETINGS

Notices of Coming Meetings must be received by 4th of month preceding date of issue

Veterinary Association of Manitoba. Summer meeting. International Peace Gardens (south of Boissevain), Sept. 1, 1951. Members of the North Dakota Veterinary Medical Association are invited to attend this meeting. E. J. Rigby, 156 Princess St., Winnipeg, Man., secretary.

Tennessee, University of. Annual short course for veterinarians. University of Tennessee, Knoxville, Tenn., Sept. 6-7, 1951. Dennis Sikes, professor of veterinary science.

South Central Texas Veterinary Association. Small animal conference and state practice act discussion. Gunter Hotel, San Antonio, Texas, Sept. 8, 1951. U. E. Marney, 101 Congress Ave., San Antonio, Texas, chairman.

Canadian Veterinary Medical Association. Third annual meeting. Banff Springs Hotel, Banff, Alta., Sept. 8-11, 1951. J. G. Anderson, 1016 9th Ave. W., Calgary, Alta., chairman, local committee.

Second International Gerontological Congress. Hotel Jefferson, St. Louis, Mo., Sept. 9-14, 1951. E. V. Cowdry, 660 South Kingshighway, St. Louis 10, Mo., president.

Northeast Mississippi Veterinary Association Clinic. Dr. W. L. Stroup's Clinic, Corinth, Miss., Sept. 11, 1951. W. C. Anderson, Macon, Miss., secretary.

Nutritional Conference for Veterinarians. Annual conference, Iowa State College, Ames, Iowa, Sept. 13, 1951. C. D. Lee, Iowa State College of Agriculture, Ames, Iowa, extension veterinarian.

Southeast Missouri Veterinary Medical Association. Fall meeting. W. R. Sheets' Animal Hospital, Farmington, Mo., Sept. 19, 1951. F. A. Stepp, 405 West North St., Sikeston, Mo., secretary.

Southwestern Iowa Veterinary Medical Association. Fall meeting. Council Bluffs, Iowa, Oct. 2, 1951. F. B. Young, Box 6, Waukee, Iowa.

Purdue University. Annual short course for veterinarians. Purdue University, La Fayette, Ind., Oct. 3-5, 1951. L. M. Hutchings, Department of Veterinary Science, Purdue University, La Fayette, Ind., chairman.

West Virginia Veterinary Medical Association. Annual meeting. Huntington, W. Va., Oct. 7-8, 1951. James Bailey, Bluefield, W. Va., secretary.

Missouri, University of. Short course for veterinarians. School of Veterinary Medicine, University of Missouri, Oct. 8-9, 1951. Cecil Elder, chairman.

Military Surgeons of the United States. Annual convention. Palmer House, Chicago, Ill., Oct. 8-10, 1951. Col. James M. Phalen, Armed Forces Institute of Pathology, Washington, D. C., secretary.

Pennsylvania State Veterinary Medical Association. Annual meeting. Bedford Springs Hotel, Bedford, Pa., Oct. 10-12, 1951. Raymond C. Snyder, N. W. Cor. Walnut Street and Copley Road, Upper Darby, Pa., secretary.

Illinois, University of. Annual veterinary conference. University of Illinois College of Veterinary Medicine, Urbana, Ill., Oct. 11-12, 1951. Robert Graham, dean.

New England Veterinary Medical Association. Annual meeting. Equinox House, Manchester, Vt., Oct. 19-20, 1951. David A. Walker, Morrisville, Vt., president.

Southern Veterinary Medical Association. Annual meeting. Lord Baltimore Hotel, Baltimore, Md., Oct. 22-24, 1951. A. A. Husman, 320 Agric. Bldg., Raleigh, N. Car., secretary.

Minnesota, University of. Short Course for veterinarians. School of Veterinary Medicine, University of Minnesota, Oct. 25-26, 1951. B. S. Pomeroy, secretary.

Florida State Veterinary Medical Association. Annual meeting. Hotel Floridan, Tampa, Fla., Oct. 28-30, 1951. V. L. Bruns, Box 623, Williston, Fla., secretary.

American Public Health Association. Annual meeting. Civic Auditorium, San Francisco, Calif., Oct. 29-Nov. 2, 1951. J. C. Geiger, director of public health of the city and county of San Francisco, in charge of local arrangements.

Mississippi Valley Veterinary Medical Association. Annual fall meeting. Pere Marquette Hotel, Peoria, Ill., Oct. 31-Nov. 1, 1951. R. J. Kirkpatrick, 1235 N. Henderson St., Galesburg, Ill., secretary.

Cornell Nutrition Conference for Feed Manufacturers. Statler Hotel, Buffalo, N.Y., Nov. 1-2, 1951. J. T. Reid, Department of Animal Husbandry, Cornell University, Ithaca, N.Y., chairman.

United States Livestock Sanitary Association. Fifty-fifth annual meeting. Hotel President, Kansas City, Mo., Nov. 14-16, 1951. R. A. Hendershott, 1 West State St., Trenton, N. J., secretary.

(Continued on p. 20)

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Animal Care Panel. Annual national meeting. Thorne Hall, Chicago Campus of Northwestern University, Chicago, Ill., Nov. 29-30, 1951. Bennett J. Cohen, the Medical School, Ward Memorial Building, 303 E. Chicago Ave., Chicago, Ill., secretary.

Regularly Scheduled Meetings

Bay Counties Veterinary Medical Association, the second Tuesday of each month. Howard F. Carroll, 2024 Lombard St., San Francisco 23, Calif., secretary.

Cedar Valley Veterinary Association, the second Monday of each month (except July and August) at Black's Tea Room, Waterloo. F. E. Brutsman, Traer, Iowa, secretary.

Central California Veterinary Medical Association, fourth Tuesday of each month. Thomas Eville, Rt. 1, Box 136H, Fresno, Calif., secretary.

Central Carolina Veterinary Medical Association, the second Wednesday of each month, at 7:00 p.m. in the O'Henry Hotel, Greensboro, N. Car. Clyde Young, Mocksville, N. Car., secretary, state Association.

Chicago Veterinary Medical Association, the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill., secretary.

Cuyahoga County (Cleveland, Ohio) Veterinary Medical Association, the first Wednesday of each month—September through May (except January)—at 9:00 p.m. at the Carter Hotel, Cleveland, Ohio. Roger W. Grundish, 4217 Mayfield Road, South Euclid 21, Ohio, secretary.

East Bay Veterinary Medical Association, bimonthly, the fourth Wednesday. O. A. Soave, 5666 Telegraph, Oakland, Calif., secretary.

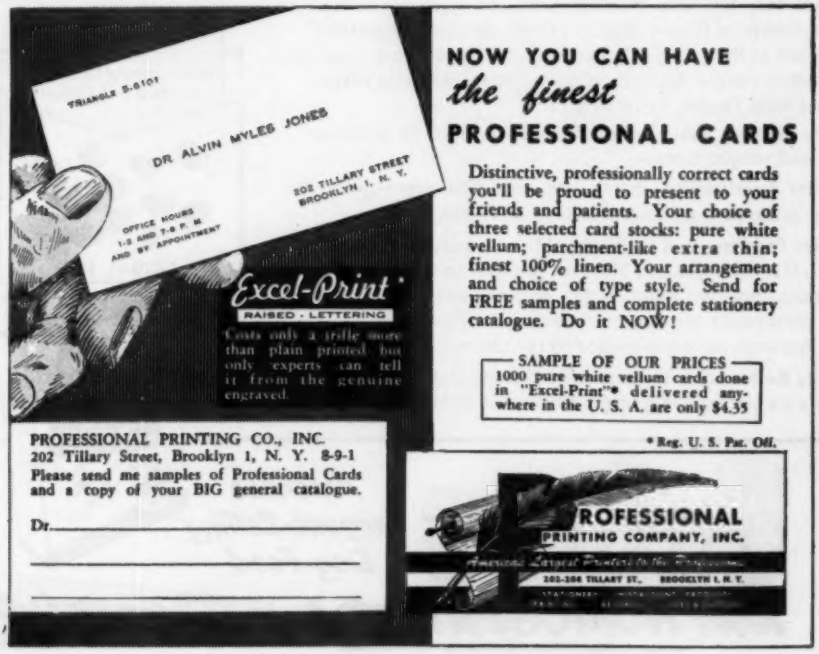
Fayette County Veterinary Association, Iowa, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Florida, North-East Florida Veterinary Medical Association, the second Thursday of each month, time and place specified monthly. J. O. Whiddon, 829 San Marco Blvd., Jacksonville, Fla.

Greater St. Louis Veterinary Medical Association. Ralston-Purina Research Building, St. Louis, Mo., the first Friday in February, April, June, and November. W. C. Schofield, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association, Houston, Texas, the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

(*Continued on p. 22*)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In February, 1951, the feed was changed to alfalfa hay, grain and protein supplement, with a vitamin powder and commercial mineral added.

The owner's veterinarians were called into the case. (Names on request). Thoro diagnosis proved worm infestation, serious inappetence and nutritional deficiency.

The worm condition was successfully treated, after which the veterinarians immediatelv changed the source of vitamin A to VpC RIB-AD — 3 lbs. to each 100 lbs. of grain. This insured the needed amounts of vitamins A, D_2, D_3 and Riboflavin.

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From April 30th, when this revised program was started, up to June 2nd (32 days) only 2 steers required medical attention. A remarkable improvement in the appearance and condition of the herd was visible as early as 2 weeks following the change from ordinary sources of vitamins and minerals to VpC RIB-AD and Con-o-mineral Supplement. The response in feed consumption and weight gains was highly pleasing to the herd owner and his veterinarians.

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(COMING MEETINGS — *continued from p. 20*)

Illinois Valley Veterinary Medical Association, the second Sunday evening of even-numbered months at the Jefferson Hotel, Peoria, Ill. S. M. McCully, Lacon, Ill., secretary.

Indiana Tenth District Veterinary Medical Association, third Thursday of each month. L. A. Snider, New Palestine, Ind., secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday evening of each month, in Louisville or within a radius of 50 miles. F. M. Kearns, 3622 Frankfort Ave., Louisville 7, Ky., secretary.

Kansas City Small Animal Hospital Association, the first Monday of each month, at the Hotel Continental. T. M. Eagle, Parkville, Route 2, Mo., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month, in the Hotel Continental, 11th and Baltimore, Kansas City, Mo. K. M. Curts, 70 Central Ave., Kansas City 18, Kan., secretary.

Keystone Veterinary Medical Association, the Penn-Sheraton Hotel, 39th and Chestnut St., Philadelphia, Pa., on the fourth Wednesday of each month. Raymond C. Snyder, 39th and Woodland Ave., Philadelphia 4, Pa., corresponding secretary.

Maricopa County Veterinary Association, the second Tuesday of each month. Charles J. Prchal, 1722 East Almeria Road, Phoenix, Ariz., secretary.

Michiana Veterinary Medical Association, the second Thursday of each month. Write R. W. Worley, secretary, 3224 L.W.W., South Bend, Ind., for location.

Michigan, Southeastern Veterinary Medical Society. Herman Kiefer Hospital, Detroit, Mich., the second Wednesday of each month from October through May.

Milwaukee Veterinary Medical Association. Wisconsin Humane Society, 4150 N. Humbolt Ave., Milwaukee, Wis., the third Tuesday of each month. Kenneth G. Nicholson, 2161 N. Farwell Ave., Milwaukee, Wis., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. C. Edward Taylor, 2146 South Broad St., San Luis Obispo, Calif., secretary.

New Castle County Veterinary Society, the second Wednesday of each month at 9:00 p.m. in the Hotel Rodney, Wilmington, Del.

(*Continued on p. 26*)

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Details the advantages of carrot oil vitamins when used in feeds to improve breeding results; to destroy oxidized milk flavors; and to promote general good health and glossy coats. Contains much information. Replete with data and references. Send for it today.

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Preparative: To improve and protect the nutritional status of the severely malnourished or critically ill patient . . . as fortification against the shock of major surgery.

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(COMING MEETINGS — *continued from p. 22*)

Harold Roberts, Paper Mill Road, Newark R3, Del., secretary.

New York City Veterinary Medical Association. Hotel Statler, New York, N. Y., the first Wednesday of each month. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

North San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month. V. E. Graff, Oakdale, Calif., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month. James R. Ketchersid, 666 East Highland Avenue, San Bernardino, Calif., secretary.

Orange County Veterinary Medical Association, bimonthly, the second Tuesday of each month. J. H. Bower, P. O. Box 355, Santa Ana, Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of each month. E. W. Paul, Box 866, Redwood City, Calif., secretary.

Pima County (Arizona) Veterinary Medical Association, the third Wednesday of each month, in Tucson. R. W. Adami, 2103 S. 6th Ave., Tucson, Ariz., resident secretary.

Portland (Oregon) Veterinary Medical Association, the second Tuesday of each month, in the Auditorium of the Upjohn Company. L. G. Nicholson, 8415 S.E. McLoughlin Blvd., Portland 2, Ore., secretary.

Redwood Empire Veterinary Medical Association, the third Thursday of each month. John E. Wion, 3614 Redwood Highway South, Santa Rosa, Calif.

Roanoke-Tar (N. Car.) Veterinary Medical Association, the first Friday of each month, 7:00 p.m., in Rocky Mount. G. L. Gilchrist, Edenton, N. Car., secretary.

Sacramento Valley Veterinary Medical Association, the fourth Friday of each month. R. C. Goulding, 11511 Capitol Avenue, Sacramento, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. R. J. McFarland, 3621 Jewell St., San Diego 9, Calif., secretary.

Southern California Veterinary Medical Association, the third Wednesday of each month. R. W. Sprowl, 11756 San Vicente Blvd., Los Angeles 49, Calif., secretary.

South Florida Veterinary Society, the third Tuesday of each month, 8:00 p.m., at the Peckway Skeet Club, Robert P. Knowles, 2936 N.W. 17th Ave., Miami, Fla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month, in Director's Parlor of the Brookside State Bank, Tulsa, Okla. John Carnes, Muskogee, Okla., secretary.

(*Continued on p. 28*)

WHENEVER INJECTABLE CALCIUM *is Indicated*

The three calcium gluconate preparations described meet every need for calcium therapy of large and small animals. These preparations are stable and are formulated for utmost therapeutic efficacy in milk fever, and for the treatment of other forms of calcium deficiency when acute symptoms develop.

CALGLUNATE

A sterile solution containing 23 per cent calcium gluconate. Indicated in uncomplicated milk fever. Preferred route of administration—intravenous. May be given subcutaneously or intramuscularly without necrosis or sloughing. Supplied in rubber-stoppered bottles containing 350 cc. and 500 cc.

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Provides high concentration of calcium and dextrose for intravenous administration. Contains calcium gluconate 24 per cent, dextrose 25 per cent. Dextrose is a valuable adjunct to calcium in treating milk fever. Supplied in 500 cc. rubber-stoppered bottles.

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This preparation is indicated in the treatment of milk fever, azoturia, eclampsia, grass tetany, and other conditions related to hypocalcemia. Contains calcium gluconate 20 per cent, dextrose 20 per cent, magnesium chloride 2 per cent. Supplied in 500 cc. rubber-stoppered bottles.

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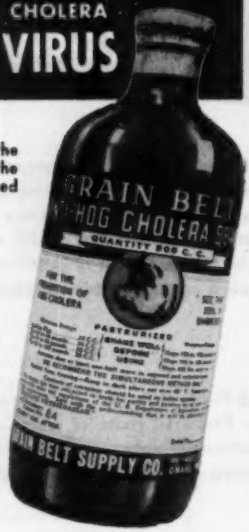

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(COMING MEETINGS — *continued from p. 26*)

Foreign Meetings

First Pan American Veterinary Conference. Lima, Peru, Oct. 20-26, 1951. José Santivañez, dean, Veterinary College, San Marcos University, Lima, Peru.

Dr. Craige Joins Staff of Pitman-Moore

Dr. A. Henry Craige, Jr. (UP '32), has joined Pitman-Moore Company, Division of Allied Laboratories, Inc., and will handle professional matters in the veterinary medical department.

Dr. A. Henry Craige, Jr.

He has done research in the fields of veterinary pharmacology and physiology and for the past four years served as professor on the staff of the University of Maryland. He also was engaged in private practice for several years.

Sodium Dibasic Phosphate in Lead Poisoning.—Eight human cases of lead intoxication were treated with sodium dibasic phosphate in doses varying from 15 to 60 gr. three times a day orally, or 5 to 10 gr. three times a day intravenously. Complete cessation of symptoms was noted in every case and the 24-hour urine lead level was brought to a nontoxic range. Although exact dosage has not yet been determined, amounts as high as 60 gr. orally three times a day have been given with safety. Normal dietary calcium should be maintained to guard against hypocalcemia. —*Cur. Med. Digest, May, 1950.*

Friskies

Authoritative information on the scientific care and feeding of dogs. Published by Albers Milling Company (a division of Carnation Company) under the supervision of Dr. E. M. Gildow, B.S., M.S., D.V.M., Director of Research.

No. 9

DOG RESEARCH NEWS

Meat in the Diet of Dogs

Raw muscle meat is deficient in many of the nutrient requirements of the dog. A dog needs vitamins A and D. He can't get these from meat alone. Muscle meat is also deficient in minerals.

Suppose you have a ration that contains all the known necessary vitamins and minerals in proper proportion. Then you mix it half and half with meat. By so doing you reduce the vitamin A and D content of the ration one-half, and might not now have enough of these essentials. Thus, by adding meat you risk throwing a complete ration off balance.

When you feed Friskies *alone*, your dogs get every food element known to be needed for complete

Extra meat can destroy the sensitive balance of the essential elements in a scientifically prepared dog food like Friskies.

nourishment. This has been proven in 19 years of study at the Friskies Kennels. By adding meat you may upset Friskies' scientific balance and incur unnecessary expense as well.

Meat and Reproduction

It has been known for many years that certain dietary factors are essential for reproduction that are not necessarily required for general maintenance or even for growth.

Meat and meat by-products have long been used by dog breeders in an effort to improve the reproductivity of the dog. However, the selection of the meat requires good judgment based on a thorough knowledge of the type of meat required. For it has been definitely established that meat varies in its value for this purpose.

Since the selection of the proper type of meat to improve reproductivity requires so much care and skill—and the meat itself is so expensive—the breeder should be interested in results obtained at the Friskies Kennels. Here, on Friskies alone, Friskies kennel men have regularly produced good litters with bitches giving plenty of milk.

We have had over 50 years' experience in animal nutrition. The results of this experience are yours for the asking. Send your questions about dog feeding, breeding or care to Friskies, Dept. Y, Los Angeles 36, California.

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June 30, 1951

EDITOR, AVMA JOURNAL
Dear Sir:

The letter written by Pete Hall and published in your July issue [ad p. 48] deserved an answer! I'm enclosing a copy of the answer I sent to him. Perhaps there are others who need enlightening!

Yours truly,

s/MRS. RUSSELL S. WANN.

Wife of Russell S. Wann, D.V.M. (API '34) of Silverwood, Ind. Past five years has practiced in Cambridge City, Ind. In service for five years: Colonel in rank. Formerly practiced in Montgomery, Ala., home of Mrs. Wann.

A "realist" you say? Bud, you'd better be!
And prepare yourself for what you'll see!
Presuming you'll list' to a veterinarian's spouse,
Let me tell you what it's like at our house.
At five in the morning (on that you can bet)
There goes the phone. Yep, it's for the "vet."
He opens one eye—and hopes for the best.
The farmer says, "Doc, I've got 6 cows to test."
"I'll be there today," says the wonderful Doc,
While thinking, "You heel, it's only 5 o'clock."

The day has just started. There is never an hour
That he doesn't hurry, with all steam and power.
He manages *maybe*, in all the hub-bub
To get in the house for a quick bite of grub.
His loving family ne'er fails to yell—
"Oh Daddy, go wash, or do something—you smell!"

The missus invites some guests in to dine
(Not often—society isn't in a vet's line)
The dinner is lovely, all seat for the feast
R-r-r-ring goes the phone! (Just murder the beast.)
There's a hush and a *hope* as Doc is handed the phone—

(*Continued on p.* 32)

burdizzo
T. M. Reg.
bloodless castrator
The "Burdizzo" eliminates castration losses . . . no shrink . . . no infections . . . no screwworm risks! Order from **Jensen-Salsbery Laboratories, Inc.**
Kansas City 10, Missouri

Captive ENZYMES

A Vital Natural Factor in Animal Nutrition

In making vitamin-enzyme concentrates available to the veterinarian, the Rumelk Company offers the profession a highly effective method of treating nutritional deficiencies and functional digestive disorders with Natural Factors.

Enzyme cultures used in our concentrates are prepared by an exclusive process, which produces a new and more practical combination of enzyme systems that have a maximum potency in the growth media.

B Complex Vitamins, for example, are present in quantity as Natural Factors in the enzyme growth. B_{12} is also an inherent factor grown in the media by enzyme culture.

Digestive malfunction in animals is a contributing cause of various deficiencies, and this condition is usually the outcome of poor diet and inactivity. Concentrated vitamin-enzyme supplements, as prepared by the Rumelk Company, give the veterinary profession the positive means of treating animals with the Natural Factors which nature intended for the animal to receive in order to maintain proper digestion for efficient food assimilation.

With proper food assimilation, the animal maintains itself in a healthy and aggressive appearance. Better starch and protein digestion gives the animal immediate food energy. Rennin activity for milk digestion decreases scouring condition. Lipase helps to digest fats so that the coat receives more body oil through fat assimilation.

The Rumelk Company offers the profession the following vitamin-enzyme products for nutritional therapy:

RU-ZYME* (cow) for mature ruminants
RU-ZYME* (calf) for the young ruminant
KA-ZYME—vitamins and enzymes for small animals
EN-ZYMEL—all liquid enzyme extract for small animals

*Contains preserved rumen bacteria (U. S. Patents Pending)

Ask your Veterinary Supply Dealer or write direct for complete details.

Vitamin Enzyme Products

RUMELK COMPANY
Manufacturers of Vitamin-Enzyme Products
SALEM, VIRGINIA

"Yes, Mr. Sourbeer—yes"—(in his professional tone)
"You've tried everything? She's not very large?
"Have you noticed yet—is there a discharge?"
The guests feebly smile and try to be gay,
But the food is just wasted, wasted away!!

When finally you settle in bed once more
Hoping to dream, to rest, or to snore,
Out of the night, like a bolt from the blue
Is that hellish phone awakening you.
You bid goodbye to your better half
And away he goes—to deliver a calf!

Privacy? Peace? Here's this revelation—
Your home is as private as Grand Central Station!
"Delicate subjects"—and words once taboo
Become just everyday topics to you!
The bad I have told you—now prepare for a shock!
I would trade him for NO ONE—*My Wonderful Doc.*

• • •

AMERICAN VETERINARY MEDICAL ASSOCIATION
CHICAGO, ILLINOIS

Dear Sirs:

Enclosed please find an article [AVMA release to *Sun-Telegraph*, July 1, 1951] which is very important principally from the health standpoint as well as its industry as a food product. Going back to Civil War days, Cholera broke out. Soldiers died like flies. A man came along and used as a method of treatment sulphur powder form he saved all afflicted that weren't too far gone. My grandfather was one of these soldiers. They fed this sulphur in food and water or any way so it got inside the pig. The same treatment goes for horses, dogs or any farm animals.

I'm confident you will find merits in the above information.

Sincerely yours,
s/MRS. J. A. T.

• • •

AMERICAN VETERINARY MEDICAL ASSOCIATION
CHICAGO, ILLINOIS

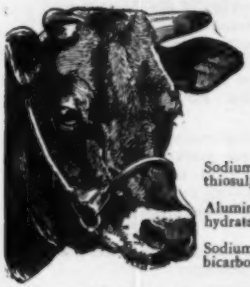
Gentlemen:

I saw this news item in the Richmond *News Leader* [June 27, 1951, from an AVMA release], Richmond, Va.

The Disease you speak of and call is an old disease my father called "Hollow Tail" and "Hol-

(*Continued on p. 34*)

ALKADOTE



Bolus-Tablets

Sodium thiosulphate	150 gr.
Aluminum hydrate	100 gr.
Sodium bicarbonate	40 gr.

Poison neutralizer to counteract toxic organic acids especially in the rumen resulting from aberrant fermentation of ingesta. Toxopexic, demulcent, antacid for intoxications of alimentary origin frequently accompanying milk fever, acetonemia, and other morbid (downer) conditions.

25 .....$ 1.25 100 .....$ 4.80
500 ..... 23.00 1000 ..... 45.00

Trial package on request. Write on your professional letterhead. Give school and year of graduation.

CURTS-FOLSE LABORATORIES
Select Pharmaceuticals for the Veterinary Profession since 1918
73 Central Avenue Kansas City, Kansas

Provides an accurate pattern against which to cut with knife or razor blade. Fits firmly, cannot move or slip when clamped into position. Made of non-rusting, light, cast aluminum, highly polished. Lasts a lifetime with minimum care. Simplicity of design and construction reduces possibility of breakage or mechanical failure. Forms immediately available to provide distinctive marking of these breeds:

Boxer — postpaid $15.00
Boston Terrier — postpaid $15.00
Great Dane — postpaid $15.00
Doberman — postpaid $15.00
Set of above four — postpaid $50.00

These patented "championship" forms are patterned after markings of winners of top honors in show competition. Forms for other breeds made on special order. Sold to veterinarians only. Send check or money order.

MacALLAN LABORATORIES
Route No. 2, Box 420 Lansing, Michigan

When you prescribe
A Vermifuge for Swine

NLC Recommends...

Sodide Powder

You'll find this product up to usual high NLC standards in quantity and results.

Efficient in Removing ROUNDWORMS

- *Readily* Eaten due to its palatable base
- Pigs *naturally* worm themselves
- *without* individual handling or attention

That's why leading veterinarians prescribe it! Scientifically blended of 50% Sodium Fluoride, and 25% Yeast, in a palatable base, SODIDE POWDER from the National Laboratories Corporation is the PREFERRED swine vermifuge on the market today. If Sodide Powder isn't already on your preferred drug list—order a supply today. You'll find it an E-plus product, the most economical and effective way to remove roundworms in pigs and swine.

Just Add it to Their Feed

Use 2 lbs. Sodide Powder to 100 lbs. dry feed with self feeder for 24 hours, allowing no slop feeding. That's all you do. With SODIDE pigs will naturally worm themselves.

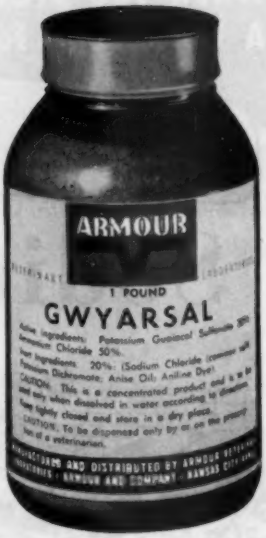
SODIDE POWDER
Available in Cartons of One Dozen
1 Lb. Containers
(Also Available in 25 Lb. Containers)

NLC

SERVING GRADUATE VETERINARIANS EXCLUSIVELY

THE
NATIONAL LABORATORIES
CORPORATION
KANSAS CITY

Gwyarsal...



For Horses—Cattle—Sheep—Swine—Dogs—Cats

A concentrated product for use in preparing expectorant solutions for domestic animals... Freely soluble... A red powder that produces a red to reddish-brown colored solution... Packed in 1-pound glass bottles.

Active ingredients: Potassium Guaiacol Sulfonate 30%; Ammonium Chloride 50%.

An excellent dispensing item, reasonably priced. Its use means *satisfied* clientele.

ARMOUR VETERINARY LABORATORIES • KAW STATION • KANSAS CITY 18, KANSAS

(CORRESPONDENCE — *continued from p. 32*)

low Horn." He was a graduate from VAMC (Virginia Agriculture Mechanical College—now known as V.P.I.) He specialized in farming and knew a great deal about cattle and never had a "Vet" on the place.

The cows were affected the very same way as you describe the "listerellosis" the same that my father called (Hollow Tail and Hollow Horn) caused by a tiny germ that would get into the tail the part that the cows fights the flies away with. My father would feel the whole length of the tail from the body to the very tip, if it was Hollow he would *split* the whole length of the tail and stuff it full of (Old fashioned lard salt and black pepper) wrap it securely so it would not ooze out. In three to four weeks you would find the cows able to eat and in six weeks cured, able to stand up and tho they appeared weak for some time they would pull out of it. My being the milkmaid, my father related to me the symptoms of this disease and cautioned me many times to watch out for it among the cattle. I have seen as many as 3 head out of 9 come down with this. It's an insect or germ that eats from the tip of the tail and when it gets into the spine the cow does not have too much of a chance or it will take longer to cure—but this is a sure cure.

The same applies to the cow with (Hollow Horn). The cow is affected very much the same, becomes listless and if you will take a spoon or anything and tap the horn lightly you can detect the Hollow Horn from the one that is not diseased for the one that is diseased sounds Hollow. You *saw* off the horn that sounded Hollow and apply the same mixture for the cow with the Hollow Tail.

Lard-salt (the larger part) salt and black pepper. We have had cows to go completely mad when we did not realize their plight in time and the germ has gotten into the brain of the cow or vital tissue of the brain. They go completely mad. "A mad cow" they butt the young orchard at home all to pieces is one of the memories I have of what this terrible disease can do. This is so silly and simple you may laugh at it but I hope you will get the cattle men to try it. You won't be sorry and if it does not work you have a deadlier disease to fight than the one we so simply called Hollow Horn and Hollow Tail. I just wish I could see the cows that are sick and examine them I would recognize it at once.

Thanking you I am
Yours truly,
s/MRS. I. C. H.

Streptomycin, so dramatic in its short-term effect, has one serious long-term limitation, the capacity of the tubercle bacillus to adapt itself to the presence of streptomycin.—*Forty-seventh Annual Meeting, Nat. Tuberc. A., May 14-18, 1951.*

There's LEAN, RED MEAT* in KEN-L-RATION

It Says So On The Label

INGREDIENTS: Water, HORSE MEAT, Ground Horse Bone, Soya Grits, Oatmeal, Wheat Products (Cracked Wheat, Wheat Germ, Shorts, Wheat Bran), Cracked Barley, Horse Meat [illegible] 3.2%, Salt 0.5%, Primary Dried Yeast 0.18%, Irradiated 7-Dehydrocholesterol [illegible]%, Onion and Garlic Powder for flavoring, Sodium Nitrite 0.0045%, Carotene 0.003%.

MANUFACTURED BY The Quaker Oats Company CHICAGO, ILL., U.S.A.

Ken-L
RATION
DOG FOOD
FOR ALL BREEDS
INSPECTED AND CERTIFIED BY U.S. SEPT. OF AGR. AS A NUTRITIOUS MAINTENANCE DOG FOOD
Look for this U. S. Government Seal of Inspection on every can of KEN-L-RATION

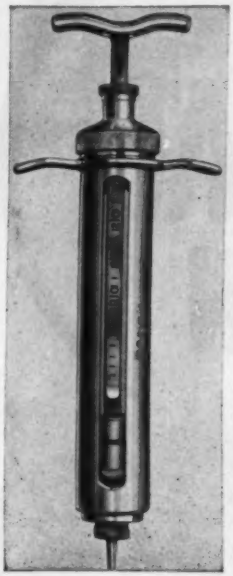
Fortified With Vitamins and Minerals, Too!

*When you recommend KEN-L-RATION, you are sure it is a dog food that gives sound nutrition. As it says on the label, every can contains lean, red meat—choice cuts of U. S. Government Inspected horse meat. This famous food also contains all vitamins, minerals and other elements known to be essential for dogs. Extensive kennel tests and the experience of many leading veterinarians prove that dogs of all breeds thrive on KEN-L-RATION. You can recommend it with confidence to dog owners.

KEN-L-RATION

The Quaker Oats Company
Ken-L-Products Division
Chicago, Illinois

Ranch Record Veterinary Syringe



Superior quality veterinary syringes—Choice of ground glass barrel with metal plunger or rubber packing—Accurate dosage and smooth operation always assured.

Inexpensive replacement parts available.

Inquire at your nearest veterinary dealer or wholesaler concerning this outstanding product.

Sizes 2 cc. to 40 cc.

Boston Record Syringes

High quality syringe consisting of graduated, ground, resistance glass barrel with nickel silver plunger and strongly constructed metal parts. No Washers—No Binding Rubber Packings to interfere with smooth operation. Easily disassembled for sterilization.

Low In Cost

Boston Record Syringes create sales for the dealer and satisfaction for the user.

Repair exchanges available.
Sizes 1 cc. to 150 cc.

Literature Upon Request

Boston Instrument Mfg. Co., Inc.

50 Thayer St., Boston 18, Mass.

CLASSIFIED ADVERTISEMENTS

Twenty-five words or less, $2.50; 8 cents for each additional word. Replies sent in care of the JOURNAL, 25 cents extra.

Remittance must accompany order.

Deadline for want ads 8th of month preceding date of issue.

Names of classified advertisers using key letters can not be supplied. Address your reply to the key letters, c/o JOURNAL of the AVMA, 600 S. Michigan Ave., Chicago 5, Ill., and it will be transmitted to the advertiser.

Wanted—Veterinarians

WANTED VETERINARIAN—There is a vacancy for a veterinarian for poultry disease work on the staff of the Delaware Board of Agriculture. This is an opportunity to work in the largest broiler-producing area in the United States. The duties would consist of farm visits and postmortem and bacteriological work in the laboratory. Anyone interested in this position is requested to submit his application to the Poultry Disease Control Department, State Board of Agriculture, Dover, Del.

WANTED—young veterinarian interested in exceptional future in small animal hospital. Must be honest, have no liquor habits, have personality and ability, be a graduate of AVMA-approved school, and have California license. See or correspond with Dr. C. T. Litton, 349 E. Florence Ave., Inglewood, Calif.

WANTED—a young man interested in mixed practice. 75 per cent large animal, hospital well equipped; must have own car. Prefer man interested in becoming owner. Address Dr. D. E. Sisk, Mansfield, Ill.

WANTED—veterinarian, graduate of an AVMA-approved school, for combination large and small animal practice in Illinois. Must have car. Address Dr. Wm. J. Gay, Woodstock, Ill.

WANTED—assistant veterinarian, New York City dog hospital. Room available for single man. Salary open but minimum $75.00 per week. Opportunity for advancement. Give full particulars. Address "Box L 12," c/o JOURNAL of the AVMA.

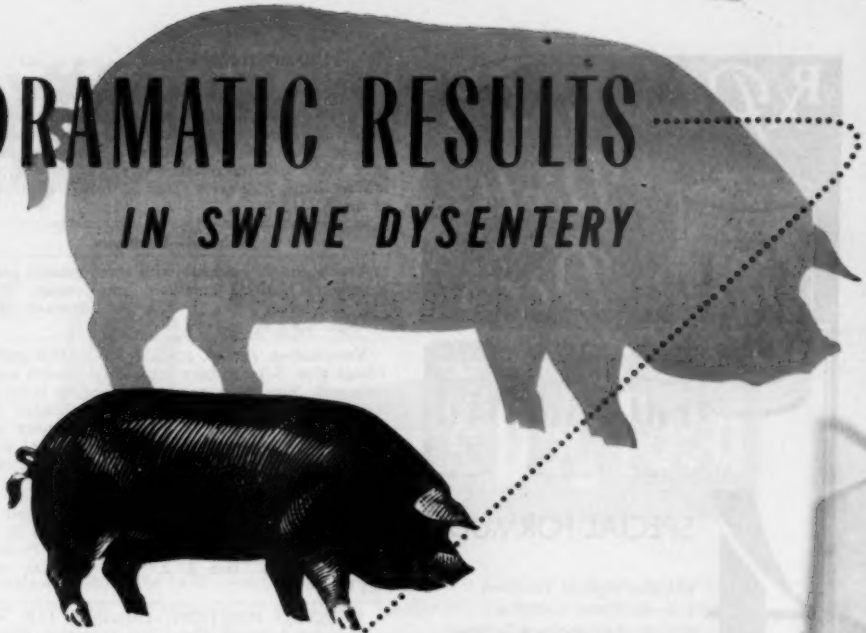
WANTED—veterinarian for small animal practice. State age, experience, nationality, marital and draft status; also enclose photo in first letter. Address "Box K 4," c/o JOURNAL of the AVMA.

Position open for good reliable kennel help able to do clipping and assume responsibilities. Living quarters. Give references and full particulars. Salary open. Address "Box L 14," c/o JOURNAL of the AVMA.

Veterinarians wanted immediately for work with small animals on staff of animal hospital in New York City. Positions permanent. Applicants must have or be able to obtain New York license. Address "Box L 18," c/o JOURNAL of the AVMA.

(*Continued on p. 38*)

DRAMATIC RESULTS
IN SWINE DYSENTERY



96% RECOVERED*...

The remarkable curative properties of orally administered bacitracin in swine dysentery were described in a recently published report.* In this study, 26 pigs (35 to 125 lbs.) were given 100,000 units of bacitracin daily by mouth for a period of six days. "Dramatic improvement" was noted in 25 animals, or 96 per cent of those treated. These results were superior to those obtained with sulfonamides and sodium arsanilate, which were employed in control animals. The authors stated that their results coincide with unreported results of bacitracin therapy in other herds afflicted with swine dysentery.

For the management of swine dysentery and diarrheas in dogs, Bacitracin Oral Tablets-C.S.C. are a convenient means of instituting treatment with this antibiotic. Containing 10,000 units of bacitracin each, they are available in bottles of 10 and 75 through regular supply sources of veterinary medications.

*Graham, R.; Boley, L. E., and Woods, G. T.: Bacitracin in Necrotic Enteritis of Swine, North Am. Vet. *31*:736 (Nov.) 1950.

Rose, H. T.: The Use of Bacitracin in Small Animal Medicine, J. Am. Vet. M.A. *117*:306 (Oct.) 1950.

CSC

C.S.C. Pharmaceuticals

A DIVISION OF COMMERCIAL SOLVENTS CORPORATION, 17 EAST 42ND STREET, NEW YORK 17, N.Y.

BACITRACIN ORAL TABLETS

Rx Prescription Diets for Dogs

4 SPECIAL FORMULAE

k/d—for Nephritic Conditions
r/d—for Obesity Correction
p/d—for Reproduction & Lactation
i/d—for Intestinal Disorders

Available only to Graduate Veterinarians

Remarkable Results Reported by Leading Practitioners in All 48 States.

DOG DIET BULLETIN SERVICE

Valuable information on Nutrition is contained in the Bulletin Service sent without charge to graduates. For your copy write to address given below.

HILL PACKING CO.
Prescription Department
TOPEKA KANSAS

(CLASSIFIED ADS — *continued from p. 36*)

WANTED—Illinois-licensed veterinarian to operate small animal hospital in Chicago. Married man with family preferred. Excellent salary and percentage, plus 6-room apartment. State age, experience, and marital and draft status; also enclose photo in first letter. Address "Box L 16," c/o JOURNAL of the AVMA.

Wanted—Positions

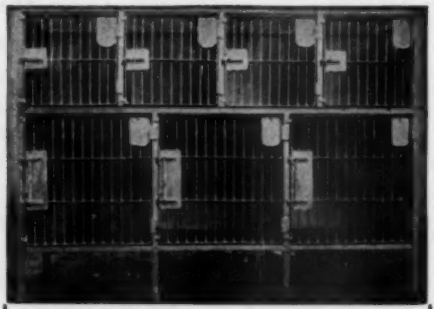
Young, single graduate with some general practice experience desires temporary employment, in the East. Address "Box L 6," c/o JOURNAL of the AVMA.

Veterinarian, age 29, graduate of AVMA-approved school plus B.S. in dairy husbandry, desires association with busy dairy practice leading to lease, partnership, or purchase. Not afraid of hard work. Pacific coast preferred. Full details on inquiry, please state location, amount of dairy practice, etc., in first letter. Address "Box L 3," c/o JOURNAL of the AVMA.

POSITION WANTED—experienced Cornell graduate, New York license, desires a position in small animal practice leading to partnership. Prefer the East. Address "Box L 2," c/o JOURNAL of the AVMA.

WANTED POSITION—Lithuanian D.P. veterinarian, graduate of Hannover veterinary school in Germany, 30 years old, married, desires position as

(*Continued on p. 40*)



RIVERSIDE ALL STEEL KENNELS—QUALITY FIRST

Seven Compartment. Upper tier 22x20x30. Lower tier 28x28x30. Five Compartment. Upper tier 22x20x30. Lower tier 27x31x30. Sliding doors may be installed between openings for extra large cages if desired. Bottoms of cages are galvanized. MINOR CHANGES IN DESIGN AND EQUIPPED WITH 3-inch ball bearing CASTERS AT NO EXTRA COST. Foolproof latches and identification tags on steel barrel doors. Bottom cages have six-inch ventilating strip. Shipment FOB our plant.

5 compartment	$195.00
7 compartment Single	$275.00
8 compartment	$310.00 each

TERMS MAY BE ARRANGED IF DESIRED

A lifetime of service and guaranteed by one of California's oldest iron works.

RIVERSIDE IRON WORKS
5422 Mission Blvd. Riverside, California

NOW! Life-saving, life-guarding *Esbilac** has been added to Borden's Dog Food

Borden, famous for food research, brings you an entirely new standard for dog food —the only dog food containing the life-saving, life-guarding food concentrate for dogs—Esbilac. Borden's Dog Food, fortified with Esbilac, is the most complete, balanced food you can buy. It contains every food element dogs need. Veterinarians and breeders have been using Esbilac for years.

BORDEN'S DOG FOOD

Just look at this list of ingredients! Compare it with the food you are now feeding!

Vitamin Guarantee 2000 U.S.P. units Vitamin A, 450 U.S.P. units Vitamin D, 1.0 mg. Thiamine, 6.0 mg. Riboflavin, and 20 mg. Niacin per pound.

GUARANTEED ANALYSIS

Crude Protein, not less than	**25.00%**
Crude Fat, not less than	**5.50%**
Crude Fibre, not more than	**5.00%**
Ash, not more than	**12.00%**
Moisture, not more than	**9.00%**
Nitrogen-free Extract, not less than	**40.00%**

INGREDIENTS: Meat Meal, Flaked Corn, Soybean Oil Meal, Corn Germ Meal, Flaked Wheat, Fish Meal, Fish Liver and Glandular Meal, Dried Whey Solubles, Rice Polishings, Dried Beet Pulp, Dehydrated Cheese, Animal Liver Meal, Ice Cream Cone Meal, Wheat Germ Meal, Vitamins A and D Feeding Oil, Thiamine, Niacin, Riboflavin, Crude Betaine Fraction of Beet Juice, Brewers Dried Yeast, Tricalcium Phosphate, Soybean Lecithin, Vitamin B_{12} Supplement.

Plus these vital Esbilac ingredients

INGREDIENTS: Coconut Oil, Cottonseed Oil, Dried Skim Milk, Alkaline Caseinate, Creamery Butter, Lactalbumin, Dried Egg Yolk, Vitamin and Mineral Mixture, consisting of Vitamin A Feeding Oil, Vitamin D (Irradiated Ergosterol), Riboflavin, Ferric Ammonium Citrate, Potassium Phosphate Monobasic, Potassium Phosphate Diabastic, Calcium Carbonate, Magnesium Carbonate, Magnesium Sulphate, Sodium Chloride, Potassium Chloride, Potassium Iodide, Manganese Sulphate, Aluminum Potassium Sulphate, Copper Sulphate, Sodium Fluoride.

Note the liberal vitamin fortification! See the listing of 46 different ingredients! No other dog food offers all these vital food elements.

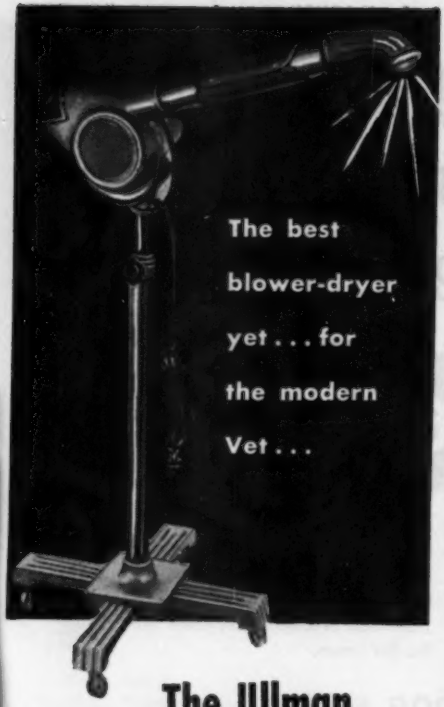
Use Esbilac to help save orphaned puppies' lives
. . . for lactating bitches
. . . for convalescent dogs
. . . for aging dogs.

"Now! More than ever—it's all you need for any breed."

The Borden Company
Dog Food Department
350 Madison Avenue, New York 17, N.Y.

*Esbilac is a registered trade-mark of The Borden Company.

©The Borden Co.



The Ullman
BLOWER-DRYER
for small animals
— blows hot or cold

NOW—At Last! a blower-dryer of incomparable versatility and always-dependable performance. Indispensable equipment for the Well-equipped veterinary hospital. Perfect for small animal drying.

- **Portable**
- **Easily Raised or Lowered**
- **Swivels in Any Direction**
- **Moves on Ball Bearing Casters**

Send For Catalog and Price Sheet Today

"15 Years of Superiority in the Dryer Field"

ULLMAN
PRODUCTS CORP.
156 Prospect Ave., Brooklyn, N. Y. 1

(CLASSIFIED ADS — *continued from p. 38*)

assistant in small animal or mixed practice. Address "Box L 17," c/o JOURNAL of the AVMA.

ASSISTANT TO VETERINARIAN—mature woman with good office and accounting background combined with practical small animal knowledge desires position in animal hospital. Eastern states preferred but would consider other localities. Available September. Address Phillips, P.O. Box 17, West Haven, Conn.

WANTED—assistantship in mixed practice located in Colorado or Nebraska. Age 29, experienced, Protestant, married. Address "Box K 17," c/o JOURNAL of the AVMA.

Wanted—Practices

PRACTICE WANTED—established small animal practice wanted in metropolitan New York or New Jersey area. Substantial down payment offered. Will also consider assistantship with option to buy. Address "Box K 18," c/o JOURNAL of the AVMA.

For Sale or Lease—Practices

FOR SALE—fully equipped small animal hospital, capacity 54 animals, on main artery of Philadelphia. Established ten years. Modern attractive apartment of five rooms and two baths. Grossing $16,000 and expanding every year. Price $35,000, minimum $10,000 cash. Address "Box L 8," c/o JOURNAL of the AVMA.

FOR SALE—modern small animal hospital and equipment, including large animal practice, located in rapidly growing community in the South. Down payment $10,000. Owner will finance balance. Address "Box L 9," c/o JOURNAL of the AVMA.

MIXED PRACTICE FOR SALE—northern Illinois, 70 per cent dairy cattle, 30 per cent small animal, in expanding town of 6,000. 1950 gross over $25,000, large drug inventory, complete equipment. Owner will finance. Price $15,000. Address "Box L 7," c/o JOURNAL of the AVMA.

Remittance must accompany order

FOR SALE—$25,000. Modern hospital with living quarters for family. 80 per cent small animal, remainder dairy. Net $1,000 per month immediately. No competition. $7,500 down, balance terms. Texas. Address "Box L 5," c/o JOURNAL of the AVMA.

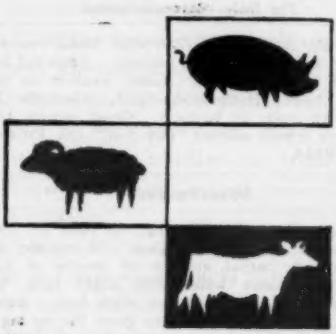
UNUSUAL OPPORTUNITY—beautifully landscaped small animal hospital for sale. Located in very progressive SOUTHWESTERN city on famous street. Best reputation for sanitation; highest type clientele, serving over 100,000 population. Will provide income for two men. All masonry construction, steel kennels. $12,000 to handle. Applicant must prove financial ability in first letter. Address "Box L 4," c/o JOURNAL of the AVMA.

FOR SALE—Iowa general practice. Gross $18,000. Beautiful 7-room home with attached garage and office-hospital. Home, hospital, practice, drugs, instruments, and equipment for $14,700 cash. Will finance. Address "Box L 10," c/o JOURNAL of the AVMA.

(*Continued on p. 42*)

a new antibiotic for topical use in veterinary medicine

Neomycin Sulfate



Neomycin Sulfate exerts antibiotic activity against a wide range of both gram-positive and gram-negative bacteria, making it extremely useful for topical application in treatment of surface infection and for intramammary infusion. The following conditions have been shown to be benefited by Neomycin therapy:

- *Bovine Mastitis*
- *Skin Infections*
- *Eye and Ear Infections*

Neomycin Sulfate is available from Upjohn sales branches or local pharmacies in the following dosage forms:

1. *Sterile Powder—Neomycin Sulfate, 0.5 Gm. per vial.*
2. *Myciguent* Ointment—5 mg. Neomycin Sulfate per gram.*
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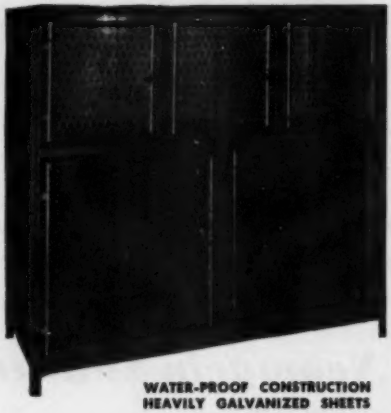

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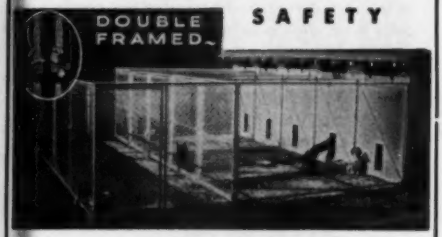

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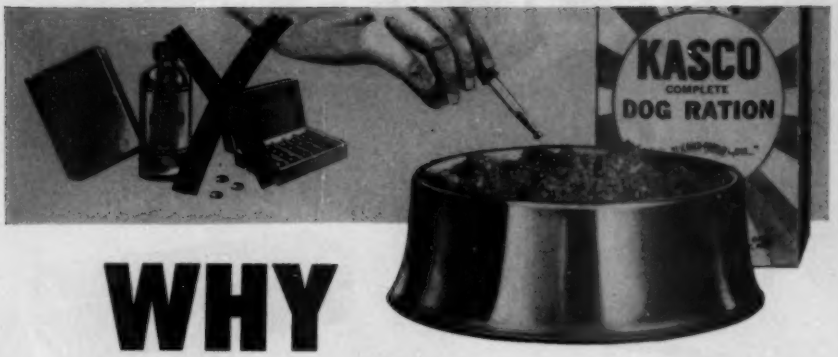
ARTIFICIAL INSEMINATION INSTRUMENTS —Essential equipment, replacement parts and materials, designed and manufactured especially for artificial insemination. Prompt delivery. New catalog. Address: Breeder's Equipment Co., Flourtown, Pa.



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During Dr. Graham's career, Jensen-Salsbery Laboratories has grown from a small veterinary supply service occupying a third floor loft to an internationally known institution with 20 branch offices and more than 275 employees.

Mr. Charles M. McCallister, who has held the position of assistant to the president for the past three years, has been appointed to succeed Dr. Graham.

Jen-Sal's established policy of confining sales to the veterinary profession only will continue to be the guideline for the firm's program of expansion.

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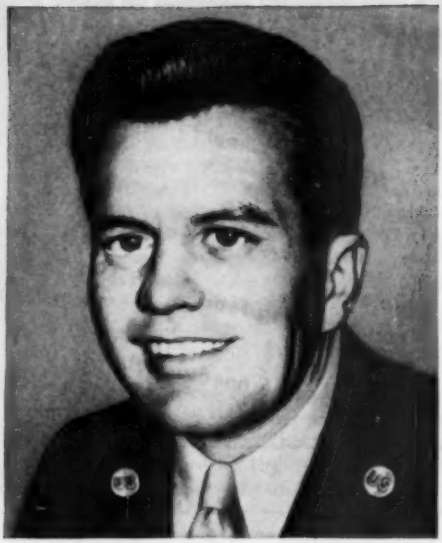

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